PRINCIPLES OF SECONDARY EDUCATION

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PRINCIPLES OF SECONDARY EDUCATION

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PREFACE

It is a matter of common experience and knowledge that a general survey of any particular field of learning is desirable as preparation for a more detailed and exacting study in such a field. College students who contemplate entering the teaching profession as members of secondary-school staffs need an opportunity to stand, as it were, on the heights and get a wide, sweeping, telescopic view of secondary education.

With this idea in mind the authors of this book have utilized several years of experience in teaching such a course to select and organize a body of material adapted to the realization of this purpose among upper-division college students and others who desire an introductory course in secondary education, and to present this material in concise, simple, and straightforward language. The book is written for beginning students in secondary education who need and desire to know what all the talk concerning professional preparation is about.

In no sense is the book intended to do more than open up the problems found in secondary education as organized in the United States, and to give students a chance to see these problems in some sort of rational perspective. Later courses and further study are considered to be the opportunity for more intensive and thorough study of the problems.

Probably the most important feature of an introduction to secondary education is the development of a sympathetic and understanding attitude toward the subject. The extent of the field of secondary education is so vast that such an attitude can begin to be attained only by such an orientation toward the ideals in secondary education as this book attempts to present. Hence, in presenting the material every effort possible has been made to reduce detail to an absolute

minimum. Certain terms and phrases, new to beginning students in education, have necessarily had to be used, but their meanings, it is hoped, have been made clear. Banal generalities have been avoided wherever possible and emphasis placed upon clear, definite, and specific statements of theory, of fact, and of implication contained in either.

The bases upon which the material has been selected and organized are not arbitrary or personal. Student reaction, adaptability in actual classroom procedure, and group judgment of instructors have served as criteria of evaluation. The utility and practicability of the topics treated has been demonstrated in many and varied situations.

Acknowledgment is gratefully made to Frederick Horridge, of Ohio State University, and C. B. Allen, of the University of California, for helpful criticism of syllabus and topic arrangement; to H. H. Horne, of New York University, for suggestions affecting the material in Chapter I; to F. W. Hart, of the University of California, for his criticisms concerning Chapter VI; to C. E. Rugh, of the University of California, for the additions and corrections which he suggested in Chapter IV; and, by no means the least, to former students in the various sections of "Education 170" as offered in the University of California for their stimulating reaction to, and frank evaluation of, both syllabus and material.

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PRINCIPLES OF SECONDARY EDUCATION

CHAPTER I

THE INSTITUTION

INTRODUCTION

Points of view. There are several angles from which it is possible to approach a consideration of secondary education. One can be a cold and rigid scientist, who approaches the problem in a purely unimpassioned and colorless state of mind. One can be a sentimentalist, who completely ignores factual conditions and who idealizes, dreams, in affected, not to say ridiculous, attitudes toward the education we call secondary. One can build up a series of principles around some pet theory, merely presenting details without regard for any logical order. Without making invidious comparisons or attempting to argue why any procedure is superior or inferior to another, this text is built up around a type of philosophy which seems, judging from experience, to hold out the largest possibilities in the development of thought about plans, pupils, subjects, and methods in secondary education.

It will be the point of view of this text that the school in general, and particularly the secondary school in the United States, has evolved out of the advancing needs of humankind in a democracy. It assumes that the evolution of the school as an institution in the United States has been the result of normal and natural causes, the inevitable result of the

attempt of a free people to develop a civilization on an entirely new principle: that a people to live a free and happy life must become self-controlled, self-governing, self-directed. The accomplishment of this end requires that the doors of learning and of knowledge be thrown wide open to all citizens equally and no limits be set to the extent of this free opportunity except those set by the native endowments of the individuals themselves and by the willingness of the citizens to support the schools.

Proceeding under such an assumption, the text shows how a secondary school evolved and how it contrasts with similar institutions in certain European countries. The present status of the institution in the United States is then set forth, and the reorganization plan is justified on the basis of the nature of secondary-school pupils and of subjects of study as the materials of education with which this institution has to deal and to function as a democratic institution.

One more statement needs to be made. This text will attempt to give an aëroplane, telescopic view of the entire field of secondary education. No effort will be made to enter into a detailed and microscopic examination of any particular or selected portion of the field. Such a procedure may, perhaps, give the impression of superficiality; but it can be justified on the basis of the necessity for a broad, general background of knowledge, with which to gain a proper perspective in any more specialized and minute examination of selected secondary-school problems. The text is not intended primarily for the specialist but rather for the general practitioner, who may, it is hoped, become sufficiently interested in some one phase of the general field to make special preparation for practice in it. To that extent the text is intended for the specialist also. If one feels at times, therefore, that one might like to stop and examine some phase of the work more carefully and in more detail, it is to be remembered that the stimulation of such attitudes is one purpose of this general treatment.

SCHOOL AND SOCIETY

Nature of society. The history of civilization is a record of the interplay of two forces which are to all appearances diametrically opposite in nature. The story of life is a tale of the struggle between two apparently opposing agencies. These two forces (or agencies, or elements, or factors) are not in reality two separate and distinct entities. They are but two aspects in which civilization and life reveal themselves. Life itself is one. It is unitary and integral; but as encountered by man in his struggle from lower to higher levels of achievement, which he calls advancing civilization, life presents two faces, one of them singular and the other plural. At one time man knows himself as an individual, separate, independent, complete; at another time he knows himself as a member of some group, combined, dependent, incomplete without companionship. The acts of man's life are attempts to understand and harmonize these two manifestations of existence, to evolve a satisfactory set of adjustments between the personal and the social.

For the lower animals this adjustment is simple, for they have but to conform to the conditions in their world as they find them. For man, however, because of the very nature with which he is endowed, this effort to adjust has been most severe. Man has not been willing to remain a slave to his world, but has demanded that he shall increasingly become the master of it and force his surroundings to conform to his needs. Probably no chapter in this story is more vital with interest than that which deals with the efforts mankind has made to work out the adjustment between himself as an individual and himself as a part of a social group.

So vividly and vigorously has life presented first one side and then the other that it is not strange that two opposing theories as to the nature of society have come to be formulated and promulgated. On the one hand, there is the individualistic theory, the advocates of which recognize as reality

only the independent, the separated face of life. To them the person is all, individual welfare is supreme; only self and individuality have force or place. On the other hand, there is the group theory, the advocates of which find no place for the individual; to them the only reality is the group — the combined, the multiple, face of life. To these the person is nothing except an agent for the group; only public approval and mass interests are powerful or regal. Both are extreme points of view, perhaps neither one held by any very large group, although certainly held by some individuals; both have elements of truth in them which indicate the trends of modern thought concerning education.

Throughout the long history of education, thought and practice have swung back and forth from emphasis upon the unitary aspects of life to emphasis upon its multiple aspects. During the twentieth century, theory and practice have perhaps come nearer to a balance of emphasis upon these two aspects of life than at any earlier period. Yet the present-day practice considers education concerned with society rather than with the individual. In the grammar of modern civilization affecting education the subject is society; the direct object is the individual.

The concern of society. With which of these two aspects of life is modern society concerned? The answer is, — with both. Modern society has come to recognize that progress and welfare, whether of the members of a group or of the groups as a society, depend upon proper adjustment between rights and duties, powers and responsibilities, freedom and restraint, and the like. The individual has come to recognize that working alone and solely on his own initiative he has little chance to advance or to develop even his own individuality. Group life also recognizes that it can make progress only as it provides a chance for individuals lacking some characteristics of the group to express within the group life variations from the established standards, and as it gives to individuals the opportunity to profit from the experiences

of the group. Human society, modern civilization, finds itself the victim, or perhaps the product, of these two forces in life, one centripetal in nature, the other centrifugal. Group life tends to conformity, individual life tends to rebellion; group life tends to unity, individual life to variety; group life tends to center around a norm, individual life tends to depart from all forms of central tendency.

Society and the individual. Without individuals society would of course never have come into being. In the long run and taken over long periods of time and over large areas, whatever makes for individual welfare makes also for social and group welfare. For any one individual at any one time this will not invariably hold true, but for individual benefit at large the interests of one are identical with the interests of many. The individual has, however, a right to respect from the group and a right to a chance for self-expression. Each individual is a new combination of universal elements, and each must inevitably react somewhat differently to the world as he finds it. Society owes to the individual, therefore, an opportunity equal to that of every other individual to make a living for himself. In like manner the individual owes to the group the adoption of measures and attitudes which will guarantee the appropriation and use of the opportunities which group life has afforded him. This interrelation of society and the individual was admirably expressed by Elbert Hubbard when he wrote, "Young man, the world may owe you a living, but you can't turn it over to an attorney for collection."

Society and institutions. So long as human activities were few, and so long as the number of human beings was small, it was always possible for the individual to have wide range for expression of his originalities or idiosyncrasies. Tools, arms, gunpowder, machinery, steam, electricity, have made it increasingly necessary for individuals to form groups around some central purpose or for some common cause. Political parties, religious denominations, labor unions, in-

dustrial combinations, fraternal orders, athletic associations, service clubs, are all in a certain sense guilds for the mutual benefit of their members. Such group activities and such combinations of individual interests as are here hinted at are multiplied many times over and in myriad directions today because of the tremendously large number of ways in which human beings are enabled to express their individualities. Many of these group types have existed and persisted in various forms through long periods in the history of the human race, until we have come to interpret them as a permanent racial heritage and have classified them in our speech as institutions.

Very early in his struggle, man came to realize that in order to secure mastery of his world some means must be found by which to preserve and pass on the knowledge which each generation gained; otherwise each new generation would have to make anew the fight for mastery. There began to evolve, therefore, some kind of means by which every new generation might, before starting off on the road to adjustment with its world, be equipped with the accumulated best experience of the human race up to that time. For this purpose of preserving and transmitting racial experience no instrument was found ready to man's hand, but in time there came about the instrument which we call the institution. To the great social institutions has been committed the duty of storing up the racial experiences, of interpreting them, and of passing them on from one generation to another. Social institutions, therefore, are the means evolved through society by which to preserve the past, interpret the present, and anticipate an ever-expanding future. Or to say it in another way, institutions are the instruments by which and through which mankind has worked to develop habits of coöperation, at the same time preserving personal freedom and permitting the development of initiative.

These institutions as social instruments have not sprung, Minerva-like, from the brain of some divinity, but they have

come into being as the result of a long and tortuous process of social evolution. Human needs and exigencies, human wit and wisdom, human dishonesty and chicanery, have all had a part to play, either positively or negatively, in the development of these social instruments. At the core these great institutions are and always have been sound. Superficially there have been bruises and even decay, but time has proved their superficiality. At times, too, the development of these institutions has appeared to be retarded even to the point of retrogression, but taken over long periods and over large portions of the human race they have steadily progressed.

Classification of institutions. Purely for the sake of convenience these instruments for the accomplishment of the purposes of group life may be classified in three groups: major, minor, and auxiliary. The major institutions may be defined as those institutions which are basic and common to all modern civilized nations. There are five such major institutions: the home, the Church, the State, business life, and the school. Minor institutions may be defined as those institutions which supplement or contribute to the activities of more than one major institution. Their number is not fixed, but it is large. Examples of minor institutions are the press, Boy Scouts, fraternal organizations, public libraries, summer camps (not the summer resorts, which are classified differently), women's clubs, service clubs, and so on. Auxiliary institutions may be defined as those institutions which supplement one major institution or contribute primarily to its activities. The number and names of auxiliary institutions are legion. A few examples are banks, Sunday schools, chambers of commerce, kindergartens, courts, stock markets. Such a classification is purely arbitrary; no hard and fast grouping of human activities can be made according to these categories, since there are many institutions of modern society which would be classified as either minor or auxiliary as differences of time, of locality,

of aim, or of organization might dictate. This is, however, of little importance, since this book is concerned with only the major institutions, and primarily with only one of these.

Nature and characteristics of institutions. A human institution, being a growth and a development, may be, at a given period, on any of the three levels of progress. It may be acting as a means by which to preserve the past experiences of a group; it may be committed to a policy of rendering service as an interpreter of the past to the present, and thus be an active servant of the present; or it may be engaged in finding the essential unity of all life, past and present, and projecting this unity into all human activities. These stages may be respectively designated as static, dynamic, and organic. All social institutions — major, minor, and auxiliary — will be found to exist and to be functioning during any given period of time at one of these levels of development.

The members of an institution may consider it as existing for the sole or, at any rate, prime purpose of collecting and storing the experiences of the group concerned, be that group large or small. The institution of puberal rites among savage tribes, particularly certain stages of these rites, illustrates this conception among early peoples. Certain types of museums, libraries which are mere book repositories, certain genealogical and historical societies, various religious orders, are illustrations from modern life. These represent the static level in the development of institutions. It is the level from which all growth and development of institutions must proceed. All institutions possess a body of knowledge or facts or ideas, which serve as a foundation for the establishment of group purposes and group efforts. At the static level the chief concern of the institution is with ways and means by which to preserve the past experiences of the group and so to pass it on, intact, to present and future generations for the benefit of the particular group concerned. It is the tribal stage in institutional de-

velopment. It is here that the factualist, the encyclopedist, the collector, the tabulator, and others take position and struggle unceasingly to preserve the landmarks which the fathers have set up. Because individuals within institutions have a tendency to do this, institutions remain stable, and are thus able to perpetuate and to hold firm all that is good, true, and beautiful out of the past. The cold-storage plants and the dehydrating plants are as essential to social welfare and to human good as are the wireless plant and the instruments of astronomy.

At the dynamic level the chief concern is with ways and means by which to preserve the past so as to make it work for the present; that is, render service, do something to and for either the individual or the group. All through the ages there have been "causes," and "campaigns," and "drives," tribal loyalties, provincial issues, party platforms, and all manner of small group and limited programs looking toward individual and social betterment. The interests of one class have been set over against the interests of another; the welfare of one stratum has been advocated at the expense of other strata; benefits have been sought for a particular group, and other groups have gone on unassisted. Under the dynamic conception there is an inevitable clash of interests; for life is not seen as a unity with opposite faces, but is conceived as a struggle between opposing forces. It is therefore as unnecessary to seek harmony in the experiences of life as it is impossible to find it. It is necessary, on this account, to drive out or to suppress the wrong, to strengthen the weak places in the defense, to build up reserves, and to break down the opposing forces, and thus to discipline life. Hence it comes about that the individual or the group must be acted on and be energized from without toward a specific end, in preparation for future exigencies. It is at this level that the legalist, the formalist, the ritualist, the efficiency expert, the human machinist, take position and devise formulas, doctrines, statutes, slogans, systems, schedules, and

the like which are to render service to mankind and set the poor old world right. Again, it is because individuals within groups have card-index minds and think in terms of time-tables, equations, indexes, concordances, codes, graphs, and similar conveniences that it is possible to do the work of the world in its ever-increasing complexity. Effective use of present experience is as fundamentally necessary to human progress as is a knowledge of past experience and tradition. The timer is no less a necessity than is the storage battery.

At the organic level the concern is with ways and means by which to secure the evolution of racial unity out of a recognition of the essential unity of all human experiences, past, present, and to come. In the life experience of the race there have appeared, in varying forms and changing manifestations, elements common to all its members, such as sorrow and joy, curiosity and wonder, fear and adoration, safety and danger, hope and despair, confidence and distrust, strength and weakness, and a myriad more. From time immemorial man has been seeking to understand the forces of life and to devise means whereby these forces may be appropriated and turned to useful and constructive ends. The methods of approach have differed through the ages, the conditions governing the search have varied as the centuries have progressed, but through it all there has persisted the common interest of the race as it has been seeking a way out of ignorance, superstition, and weakness to knowledge, understanding, and power. At the organic level the common purposes and the mutually shared experiences are recognized and acknowledged as bonds in a common humanity, and life is accepted as a changing, expanding, progressing, and continuing entity. A given period of time, a span of years, is seen but as an interlude in the onward sweep of eternity; space, great or small, is conceived as merely the channel through which the human race sweeps in a never-ending tide. Hence individuals and groups need only a just and fair chance to express to the full this common life in

its myriad forms, and the watchwords become expression, direction, growth, progress, continuity, variety, opportunity.

It is here that the creative thinker, the conciliator, the judicial-minded, the prophet, the statesman, the inventor, the executive, and the leaders of civilization generally, take their stand and span the rivers, tunnel the mountains, bridge the seas, and pierce the blue, in their thoughts and their visions, long before the actual bridge or tunnel or ship or aëroplane becomes a concrete reality. Jefferson, who dreamed a republic; John Harvard, who dreamed a university; Luther, St. Augustine, Mohammed, who conceived a great body of religious truth; Marconi, who heard messages in the ether waves; all, and sundry others, have been human instruments, individuals within institutions, who have found new channels into which the life and vigor of the race could flow to keep the stream from stagnation and consequent pollution. The dreamer, the idealist, the pioneer, the adventurer, and their kin have a place in the onward march of the human race, even as the surveyor, the mechanic, the tradesman, the agent, and the banker.

This all merely says that life is one, is unitary, and that any institution is at its best — that is, has reached its highest level — when it leads both the individual and the group into a mutual recognition of rights and duties. Society is one, but with two faces: one, individual; the other, group. The great social institutions cannot exist and neglect the individual; and in like manner the individual must needs take institutional modes of living into account in the conduct of his own life.

Society and the secondary school. It is now pertinent to ask what all this has to do with secondary education. The answer is this: the problems of all types of education are the problems that arise out of this eternal struggle of the human race to reconcile variety with unity. For the race to progress and for each generation to stand on the shoulders of those who have gone before, there must be progressive

learning and progressive means by which to mount ever higher and overcome a highly complex mode of life and living. So long as civilization remained simple it was enough that society should maintain schools which taught only the elementals. So long as a civilization remains stratified into classes of rulers and ruled it is sufficient for the ruled to have schools in the rudiments only, and proper for the rulers to attend advanced types of schools. When, however, a civilization becomes exceedingly complex, and when all citizens participate in government, then it becomes necessary for society to provide for more extensive learning and for more chances to acquire it. In this way there will be produced a "freeing of individual capacity in a progressive growth directed to social aims." How shall society provide for this learning and make this progress constant and continuous? In other words, how does society educate? This will be the next consideration.

HOW SOCIETY EDUCATES

Institutions as mediums of education. It was pointed out above that society through its institutions constantly strives to preserve the racial experiences and to pass them on to the next generation. This it does in a constant endeavor to make it possible for each generation to start its growth and its development just as far along the road of progress as possible. Admittedly, the ideal and perfect progress of civilization would ensue if each new generation could begin exactly where the immediately past generation stopped, and, appropriating all the race had gained up to that point, could move forward to the next immediate heights. Very early in the history of the race, however, man became aware empirically, if not theoretically, of the limit set upon his power to transmit acquired characteristics, and a way had to be found by which this lack could be partly compensated for in human society. This compensation appeared in the permanent character of institutions and of institutional organi-

zation. Society very early committed to institutional life the preservation and transmission of the racial experiences. In fact, perhaps no society was ever without institutions. Even the savage perceived that the individual dies, but the taboo lives on and develops into an institution, life after life and generation after generation. This was, therefore, society at work as an educator; that is, collecting, selecting, preserving, and transmitting the customs, the traditions, the manners, and the accounts of the valorous deeds in the group life, to the end that tribal unity might be secured and that tribal strength might make progress possible. In a similar manner has each institution of society come into being. The racial experiences have been many and varied. Some have been conducive to progress, and some have been detrimental. To social institutions has been committed the care of these experiences. Preservation and transmission of them is an institutional prerogative. Broadly speaking, society educates by means of its institutions.

To be sure, no such statement can hold with a narrow and restricted conception as to the meaning of the process which educates. As used here the process includes all experiences which the individual appropriates. A person is educated by every experience which enters into his life. The boy gets an education from the garage, from the car barn, from the barber shop, and the like, no less surely, and oftentimes much more effectually, than he does from the schoolroom. The lessons in English, for example, which he learns on the golf links may not result in a refinement of his speech, but he is receiving an education in the English language, nevertheless. It is a highly educative experience to be responsible for a paper route, and so it is to chop cotton, shovel snow, or pick fruit. Many of the most valuable lessons of life and living are not taught, they are learned as incidents among the activities of life. The New England boy in the past, and it is doubtless true of the boys there today, received the very best sort of civic education, because he was privi-

leged to attend as spectator the annual town meeting. There at first hand he saw democracy at work. The dance hall, the beauty shop, the dry-goods emporium, and the social club are all factors in the education of girls, and all have to be reckoned with by society when it inventories the forces which determine race progress. These experiences, acquired in out-of-school life, are basic, and they form the groundwork upon which the school as an institution of formal education is forced to build. Only when education is conceived in this broad and extensive way, and as a long, human-race process, can the proper place of the secondary school in the social order be realized. These organized forces which educate for race purposes must be examined in detail.

As mentioned above, there are five great and primary, or major, social institutions which thus educate: the home, the Church, the State, business life, and the school. At heart, each one attempts to teach a single great lesson to the race, and to each has society committed the duty of educating its youth according to the racial experience with some fundamental principle of progress. That is to say, each institution has grown up around the traditions and customs which are the precipitate of racial experience.

The home as educator. Basic for success in all relations between the individual and the group is the lesson of obedience. Law and order, respect for authority, coöperative effort under direction, and the like become possible only when the lesson of obedience to the constituted authorities is wholly learned. This lesson the racial experience has shown to be fundamental to progressive endeavor, and so the home, once started, began to render service as the instrument with which to initiate the education of the youths of the race by giving them their first lessons in obedience to law and in respect for constituted authority.

Illustrations of the unconscious acceptance and practice of this educative function by the home are abundant. The

motherly admonitions "No, no! Baby mustn't!" "Burn, burn!" "Naughty, naughty!" are short and direct lessons to the baby, and they have grown out of racial as well as out of personal experience. Every time the home is a violator of nature-made laws or of man-made laws it is educating the youth away from respect for and obedience to constituted authority. The fire lesson, the sharp-instrument lesson, the daily exercise, and the regular-habits lesson are all results of racial experiences, and all count for or against race progress to the degree to which they are taught and learned early in the life of individuals. The necessity for care and support of the home, its function as a nursery of the young and dependent members of the race, its mission as the point of origin for group loyalty, and so on through the long list of social virtues as exemplified in the home, are all direct or indirect lessons in recognition of law and order, of obedience, of self-control, and of self-subordination.

Historically, the kinship group out of which has come the home was the first of the great social institutions to take form, and originally many other of the racial experiences were taught in it. As the activities of the race became more complex and extended to a wider range, it became necessary to have other forms and types of organization, and thus were drawn away from the home many of its opportunities to instruct. Although it lost many opportunities to teach the lesson, the home has remained the one place to which society has continued to look for basic instruction to its youth in the oldest experiences the race has had, — the experiences with nature's laws and with their counterpart, the laws which men have made.

The Church as educator. In addition to this the race has found itself acquiring experiences from without its immediate ken. The shadow experience, the echo, sleep, dreams, death, heat, cold, wind, and so on — all pointed to a real but intangible force at work within the life of man. Fantastic, weird, mystical, and mythical have been the tradi-

tional explanations of these spiritual experiences of the race, but out of these efforts to interpret such experiences has emerged a fundamental lesson for all members of the human family who would try to balance individual against group relations; namely, the solid and fundamental lesson of righteousness. To be right without being righteous is not enough in human relations when the individual and the group face one another with their varying and conflicting interests. Only righteous thought and deed can reconcile the two, can neutralize the opposing factors in this twofold life. It is perfectly possible for an individual to be right, so right that he is arrogant, and yet be far from righteous. The distinction was pointed out by Christ when he condemned the Pharisees for their scrupulous care in paying tithes of mint and anise and cumin, while they omitted the weightier matters of the law, judgment, mercy, and faith. It was this addition of an inner motive to all action which was the burden of this great Master's teaching. The Sermon on the Mount, the story of the disciples passing through the corn on the Sabbath day, the driving of the money-changers from the temple, scores of sentences and phrases, point out the great lesson of life that "this other man" whom the savage saw when he looked into the quiet pool or whom he dreamed about in his sleep, and sensed in many other ways, this spirit of man, is the ultimate controlling factor in life's relations. To the Church has been committed the duty and right of educating the race in thoughts, feelings, and deeds of righteousness. The educational problem of the Church is the problem of how to make the Golden Rule function in the everyday life of the human race, how to train and educate the race to practice righteousness day by day and toward all mankind. The educative task of the Church is not performed when it teaches how to do right; it must do more and go farther, it must teach the race to be righteous.

The State as educator. In all human history there has been no more profound statement concerning the function

of human systems of political government than that in our own Declaration of Independence, which reads as follows:

> . . . all men . . . are endowed by their Creator with certain unalienable Rights, . . . among these are Life, Liberty, and the pursuit of Happiness. . . . to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed. . . . whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or abolish it, and to institute a new Government, laying its foundations on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness.

The institution of the State — that is, governments — is a social instrument with which to secure and guarantee protection to the individual in his rights, especially in the rights of his own life, his own property, and his own happiness. Even this was a narrow and selfish conception of government until it was interpreted to mean that the guaranty of personal rights carries with it the assumption of personal duties and group responsibilities. That government is the best and the most satisfactory which is able to guarantee to those living under it a full and free opportunity to develop most completely the capacities and abilities which they possess as individuals. This is the square deal, the lesson of justice, the guaranty of an equality of opportunity. In one of his finest passages H. G. Wells points out the need for a more universal recognition and application of this idea concerning government. He says:

> Our lives, we see with growing certitude, are fretted and shadowed and spoilt because there is as yet no world-wide law, no certain justice. Yet there is nothing absolutely unattainable in world law and world justice.[1]

Nor does he stop here; he goes on to point out that individual participation in government involves a duty on the

[1] H. G. Wells, *Outline of History*, Vol. II, p. 574. By permission of The Macmillan Company, publishers.

part of the State to prepare citizens for such participation and seek their coöperation. He writes:

> Hitherto the government of states had been either authoritative, under some uncriticized and unchallenged combination of priest and monarch, or it had been a democracy, uneducated and uninformed, degenerating with any considerable increase of size, as Rome and Athens did, into a mere rule by mob and politician. But by the thirteenth century the first intimations had already dawned of an ideal of government which is still making its way to realization, the modern ideal, the ideal of a world-wide *educational government*, in which the ordinary man is neither the slave of an absolute monarch nor of a demagogue ruled state, but an informed, inspired, and consulted part of his community. . . . The modern citizen, men are coming to realize, must be informed first and then consulted.[1]

Governments educate as they function to preserve, interpret, and pass on the experiences of the race in its struggle to make it possible for each individual to possess fairly, to develop fully, and to use wisely that which is his own. This it does when it teaches the fundamental lesson of justice. For the State to protect the individual in the possession of his rights is not enough; it must go farther and instruct him in a recognition and acceptance of his responsibilities; it must encourage the development of individual aptitudes and provide opportunity for full realization of them. Governments which stop short with emphasis upon the protection of property rights only have realized but a small portion of the lesson of justice. The more complete comprehension of the lesson involves the conception that expression of individuality must be guaranteed and that all individuals must be stimulated to make the most and best of their native endowments. In the words of Dewey, "In the degree in which society has become democratic, social organization means utilization of the specific and variable qualities of individuals." [2]

[1] H. G. Wells, *Outline of History*, Vol. II, p. 147. By permission of The Macmillan Company, publishers.

[2] J. Dewey, *Democracy and Education*, p. 105. By permission of The Macmillan Company, publishers.

It is the educative function of the State to teach justice through the instrumentality of setting free individual capacity and of making it possible for the individual to grow to the fullest measure of his or her native capacity. The right to realize on one's own best abilities for the good of the group, regardless of whether those abilities are intellectual, manual, artistic, financial, or what not, is justice under the new freedom. To develop and teach this lesson is the work of the State.

Business life as educator. One of the most interesting chapters in all human history is that which tells of the struggles of men in their endeavors to do business one with another. It is not necessary to go into the history of industry and economics at this point. Suffice it to say that it was many centuries before the race discovered honor as the essential to all business relations, and longer yet before it could even begin to teach the lesson successfully to any considerable number of the individuals in society who do business. Yet the experiences of the race through all time point unmistakably to the principle of honor as the *sine qua non* of permanent success in business as a social enterprise. Mere honesty is not enough, though the lesson of honesty has been a difficult one to preserve and pass on; but the more vital, the more organic, the more all-pervasive sense of honor is the one element and factor that makes business possible in a complex society. A single illustration must serve, though one can doubtless think of a score of others. Consider for a moment what alone gives value and currency to the bank check. Its worth is no greater than the honor of the men or firms who sign and indorse it. So completely is this true that we often speak of honoring checks. We honor a check not simply and alone because we believe in the honesty of the signer or of those who have indorsed it but because we believe in that more subtle and more subjective element of honor. Modern business would be impossible without the credit system, and it in turn is founded upon the honor of men. The business world renders to

society the service of educating the new generations according to the experiences it has had with honor as a guide to progressive adjustment between the individual and the group when it comes to exchange of commodities. It is the function of business, by precept and by example, to teach the lesson of honor. To the extent it does so it is functioning successfully as an institution of society, educationally considered. The lesson of honor is essential to social growth and progress.

The school as educator. Between all the social institutions so far considered and the one about to be considered there is an outstanding and essential difference in the manner, or method, by which the educative process is carried on. The four institutions just considered educate informally and as an incident to their other social functions. The prime and original purpose in their development by society may or may not have been to secure their aid as educative forces. Certainly it has come about in the course of their development as instruments in a social order that they have educated the new generations informally and by implication only. This is not so in the case of the school. The school came into being as a specific instrument of society definitely charged with the duty of educating the young of the race. In the same manner as the other social institutions it had a definite principle of life, growing out of experiences, to teach as a lesson to each succeeding generation. This was the lesson of the love for truth. By this is meant not merely the lesson of love for that which is not a lie, but the lesson of love for that more universal, more generic, more abstract, essential element and principle of all life, that more spiritual, if you please, more organic element which we call the truth. Racial experience taught society long since that this love for truth lies at the heart of all progress. Without it progress in the finer characteristics of human life is impossible; and when this element is lacking, the other institutions labor in vain to work an understanding between the

individual and the group. In a formal way, then, the school proceeds with the education of new generations, patiently striving to impart the lesson of truth-loving and truth-seeking in connection with all human experience, whether past, present, or future.

Are there not other institutions that educate, and do not those just mentioned educate in ways not named? Undoubtedly this is true. At the same time one will probably recognize that many of the auxiliary institutions which come to mind are parts of one or more of the major institutions named. In like manner the experiences of the race with ideas and purposes other than those designated as belonging to a given institution will probably be recognized as contributory to or coördinate with the others. For example, the home undoubtedly teaches the experiences of the race in matters of food, clothing, and shelter. But these are merely lessons in obedience to the immutable laws of nature. The same would be true for all the other institutions that educate. The answer to the question at the head of this section is that society educates through its institutions: informally through the home, the Church, the State, and the business life, and formally through the school. Present concern is with this last institution and raises the question of the school as a social institution.

THE SCHOOL AS A SOCIAL INSTITUTION

To satisfy a human need. As we have seen, the school came into being as the institution to which society committed the task of preserving, interpreting, and transmitting racial experiences. It was the last to develop, and it came into being, like all the others, in order to meet a human need. All the other institutions of society incidentally provide sets of experiences for the youth of the race, and in addition to the performance of their specialized functions they preserve the traditions, customs, and experiences of

the group and pass them on. In the course of racial development life has become increasingly complex, human interests have expanded, and population has greatly increased. All these occurrences have multiplied the problems of life and furnished a wide as well as varied range of experiences. Life among savages is, and has always been, limited, simple, and direct; life among civilized peoples is extended, involved, and intricate. The first four institutions of society have not attempted to select among these experiences, but have passed them on unselected. Not all racial experiences, however, are conducive to the progress of society, and hence there is need for some sort of selection and some institution to do the selecting. Then, too, this incidental and informal transmission is too uncertain to meet the needs of society; for too often there occur omissions or antisocial transmissions. Thus did the teaching class, and finally the school, arise, committed to the task of selecting and arranging such racial experiences as ought to be preserved and transmitted, the better to insure progress for man as he struggles to understand his world.

The school has followed the natural evolution of all institutions of society. In its development are the same distinct levels of attainment, on any one of which a particular system of schools or a particular type of school or a particular school or even a particular school in any of its specialized activities may suffer arrested development. The function of the school as a social institution, then, may be considered on any one of the levels: static, dynamic, organic.

The static conception. On the static level the school becomes a sort of cold-storage plant, a cache of racial experiences to be held intact and in order for society. The collection of race experiences is a kind of trust committed to the school as trustee, and the school must keep it intact and have it ready to deliver on demand, unsullied and unstained. The better to perform this function it will classify, tabulate, and pigeonhole racial experiences and have

them instantly ready to deliver. It will be meticulous in its care that the traditions of the fathers and the landmarks which they have set up be preserved. Of course it will be also busy in collecting the racial experiences of the present in order to have its collection complete, and these too it must classify and allocate.

The philosophy of such a procedure is self-evident. The thing that has been is right. Accept the tradition, the custom, as it is, and begin there to live your own life. The past is always right, the procedure that has been followed is the correct procedure; never mind about the changed circumstances or the modified conditions. Store up the mind of the youth with the past racial experiences, and you have educated him, you have placed him where the race had arrived at his coming.

The static school. When the school functions as a social institution at this level, it attempts to teach only by the method of memory. Education is expressed in terms of knowledge; it is fact-centered. The school stocks up the mind of youth with percepts and with precepts. It cautions him to keep the data of knowledge well separated and distinct, well tabulated and systematically arranged, and periodically the school authorities proceed to open up his mind by fact-examinations to see whether he has the data all there in as perfect a state of preservation as when they were poured into him. The pupil's mind is not even a mental hopper into which the grain of truth can be poured to be ground, for that grain at examination time must eventuate as perfect and as complete as when given to the youth for safe-keeping. At this level the school is so ultra-conservative as to be reactionary. There is unwillingness to accept the new or even to experiment with it. There is a specializing and a partitioning that is little short of fatal to truth. The keepers of the school walk forward with their eyes turned backward. They see today only when it is yesterday; they never vision, much less see, tomorrow.

Practically, such a point of view forms the base of the objections which teachers make to new methods of instruction, supervision, administration, and the like. The English teacher who objects to reading science papers to evaluate their language form, because he thinks that it is not the work of the English department but of the science department to read science, is actuated by this pigeonhole conception of the school and its function, — the cold-storage philosophy of this institution. The current unwillingness to sift out and rearrange material so as to have courses in general science, in general mathematics, in the social sciences, and the like is at base but a manifestation of a belief in the school as a social institution at the static level. The teachers are worshipers of the god of things as they are. It is the group defending its group traditions; it is tribal, provincial, Gopher-Prairie thinking about the school.

Dynamic point of view. Viewed historically again, the school evolved out of this provincial conception, and the individual came into his own. Malcontents within the social group were unwilling to accept on the authority of the few that the past was a sure guide even for the present, much less, perhaps, for the future. These malcontents broke through the crust of traditionalism and conservatism and demanded recognition of the individual in the social order. Perhaps their spirit can be shown no better than by quoting directly from the writings of one of their earliest leading advocates, Rousseau.

> We must choose between making a man and a citizen, for we can not make both at once. . . .
>
> The whole sum of human wisdom consists in servile prejudices; our customs are nothing more than subjection, worry, and restraint. Civilized man is born, lives, and dies in a state of slavery; at his birth he is sewn up in swaddling clothes, at his death he is nailed in a coffin; so long as he preserves the human form he is fettered by different institutions.[1]

[1] J. J. Rousseau, *Émile*, Book I.

> In order then that the social compact may not be an idle formula, it includes tacitly this engagement, which alone can give force to the others, that whosoever shall refuse to obey the general will shall be compelled to it by the whole body, which signifies nothing if not that he will be forced to be free.[1]

Interpreted according to modern conditions, this means that the school must not merely restrict the activities of the individual but, on the contrary, must do something for him. It must not merely transmit racial experience for the good of the group alone; it must go farther and render a service to the individual. Something must be done for the individual to aid him in relating the experiences of the race to the affairs of the workaday world, to aid in making that adjustment between the individual and the group which makes up so large a part of life's activities. Society has a contribution to make to the individual through the school as an aid to him in the solution of his problems, and this contribution is much more than a mere telling him what the group has done in the past. There must be a constructive and a positive telling, not a mere restriction of activities because the taboo of the tribe is upon this, that, or the other.

The thinking as expressed by Rousseau was in terms of preparation, of getting the individual ready as a citizen or as a man, adjusting him either to living the life which society prescribed or to living his own life. Note, however, that it was an "either-or" proposition. Either prepare the individual to be a member of society or prepare him to live for himself. There is no real adjustment here between the individual and the group. The only choice is a choice between license and slavery, between abandoning the restrictions of society and giving over entirely to its mandates.

The dynamic school. For society, then, under this conception the school, its institution, must render service in maintaining its dictates. To use the terminology of Rousseau,

[1] J. J. Rousseau, *The Social Contract*, Book I, chap. vii.

the school will make the individual a citizen; it will have no care for him as a man. For the individual, then, under this conception the school must render service in securing for him freedom from social restraints; it must make him a man, but it will have no care for him as a member of society. The school is thus divided between two, but whichever way it turns it must render service: it must be a dynamic institution; it must function at the second level. It may choose which it will serve, but serve, it must, one or the other.

Perhaps this can be made clearer by illustration. At this level the individualist says the function of the school is to preserve and transmit racial experiences, that society, the group, may serve the individual; that is, may prepare him for something for his sole benefit. The product is the class school, the school which serves the individual for his personal benefit and by its form and teachings isolates him from society, makes him exclusive. On the one hand is the extreme culture idea, the study of life and the search for truth for the mere love of learning itself, an essentially selfish and nonsocial conception; and on the other hand is the extreme vocational idea, the study of that alone which will bring in most for the individual as a trade or a vocation, without regard to the needs of society or its demand. Between these two extremes will be an astounding variety of types of class schools — in fact, just as many as there are class groups or individuals demanding to be served. At this level the purely social-minded, on the other hand, will take the other extreme position; namely, that it is the function of the school to preserve and transmit racial experiences, to the end that the individual may serve society even to the sacrifice of his own life. That is to say, the individual is to be prepared to serve society for the benefit of society, and the school is the institution which is to do something to him (and incidentally for him) which will make him capable of rendering this service to society. Follow this out, and one gets the conception that the sole

mission of the school is to produce citizens. Thus again the extreme practical idea becomes defensible; that is, teach only what is useful to society, and only what society says is the truth. In like manner the extreme culture idea becomes defensible; that is, select the finest material within the citizenry wherever found and carry it to the heights of culture and skillful technique to be the leaders of the masses in time of stress and strain. Society will need individuals with this refinement of learning; so supply it through the school. In both cases the school is regarded as an institution that will do something to or for somebody, to or for some social or individual end and purpose.

The persistence of this idea is astonishing. There is much discussion about preparation of high-school pupils for college or for life, preparation for a vocation or for culture. The fundamental idea is that there is some sort of contradistinction between the two purposes. To be sure, there have been efforts to reconcile the two ideas under this service conception, the most common one being the attitude that what is good preparation for college is good preparation for life. That is one way to make the lion and the lamb lie down together: with the lamb inside the lion. It is the old familiar compromise in which one member of the compromise entirely abrogates and surrenders his position. One can readily think of many other illustrations of this concept that the school is purely and solely a dynamic institution.

An organic institution. At the third level, society is conceived as organic in nature. It is held that there is a force, a series of bonds, or at least a bond complex in nature, which holds the members of the race together in an indissoluble unity and which leads the race on toward progress. Under this theory it becomes the function of the school to preserve the experiences of the race not in the interests of society or of selected groups or of individuals (alone or in contrast) but rather in the interests of progress and unity within the human race as a whole.

Such a statement in itself implies, moreover, a function of the school over and above that of mere collection, preservation, and transmission of racial experiences. The implication is that if the school is to function completely, as just stated, it must become an interpreter of the present experiences of the race and must, further, strive to anticipate circumstances and conditions to a sufficient extent to enable it to predetermine what the racial experience shall be; that is, to anticipate the future and plan for meeting it. Notoriously, the school has been a follower and not a leader of conditions within society, and according to either of the other conceptions it can be nothing more than the follower it has always been. Under this last conception and interpretation it can become a leader in a very real and vital sense. The school, thus conceived, would no longer wait for destiny but would itself make destiny and help to determine human direction.

The organic school. In this highest conception the school as a social institution does not function as the servant of individuals as such, even though it must take into account individual differences. In like manner it is not the servant of any group within society, nor can it be hampered in its legitimate functionings by the demands of any of these groups, even though all the time it must serve the legitimate ends and purposes of all group life. The needs and demands both of individuals and of groups are narrow, limited, personal, and provincial, usually prejudiced. The school as a social institution cannot lend itself to the service of such demands or such needs, for life and the race must go on after particular individuals, groups, and causes cease to exist. The school must function as a race-old and race-long institution, and as such must not be limited by the necessity for allegiance to local or personal interests.

This is only another way of saying that life is *one*, that life is a unity. This is, perhaps, what Dewey means when he says that the school is not a preparation for life but *is*

life; or when he says that "since growth is the characteristic of life, education is all one with growing and has no end beyond itself," or that "education is a constant reorganizing or reconstructing of experience." [1] The school is to function as a vital, organic, moving, and changing institution. It must let individuals and groups into the life of the past. To that end it must collect and store, sort out and classify, tabulate and arrange the experiences of mankind with his world. If, however, the school stops with performance of these duties, it stagnates, it contributes to progress only in a passive manner. It must also attempt to interpret these preserved experiences and read life's meanings out of them. The idea that knowledge is power is not enough. Knowledge must be directed; it must be put to work under controlled conditions, or it will work havoc with both individuals and groups. Above all, the school must strive to direct individual and group conduct in such ways as to make progress increasingly possible for the race. It must enter into the very life and being of the social order and set up goals, evolve ideals, develop motives, attitudes, purposes, thus providing channels for the flow of human thought and human knowledge, direction and destination for race energy and race experience.

Special function. In this way the school becomes a mutual agent with the other institutions of society which educate, but with this difference, that it is specifically charged with the task of education as its prime and sole function. As the institution charged with this duty it has rights, duties, and opportunities. It has the right to assist in giving direction to the educational activities of the other institutions. It is its duty to take over those activities of other institutions which are educative in nature, when any of them fail to function in this capacity or when any of them so function as to retard race progress. The school, therefore, is the instrument created by civilized society to seek out truth,

[1] J. Dewey, *Democracy and Education*, pp. 62, 89. By permission of The Macmillan Company, publishers.

beauty, and goodness; to preserve man's knowledge of these three attributes of his world; to transmit this knowledge to generations yet unborn; and to point out its bearings on human destiny. Mankind has developed the school for the express purpose that the great lessons which humanity has learned at terrific cost shall be made available for future generations and shall be understood by them. To that end it has made it a specific duty of the school to teach these lessons. When, therefore, any one of the other institutions fails to teach its lessons, the school is in duty bound either to stimulate it into assumption of its proper and necessary educative functions or else to assume the burden and to do what the other institution fails to do. But because the school has this right and this duty, it must not become arrogant and interfere with the other institutions as long as they are performing their several educative functions in a manner conducive to human betterment. In this respect the school is in a delicate position and must exercise a very fine discrimination and very wise judgment. That, however, is one of its responsibilities, together with those which lie within the very nature of the institution itself; namely, to blaze new trails, to vision the future, and to point the way toward a new set of controls for human destiny.

Democracy's school. This broader and more inclusive conception of the school in its relation to civilization must be made real if the school is to participate effectively in the struggle for advancement of civilization. Race progress is conditioned by two factors, one personal, the other social; namely, individual capacity and opportunity for its development. The amount and kind, or quality, of individual capacity are biologically determined. Schools can do little or nothing to modify these elements in the strictly human factor. Over a long period of time and through the process of generations it may be possible for it indirectly to secure the evolution of a more capable and more original as well as more self-active type of humanity. Its immediate task,

however, is concerned with the factor of improved environmental conditions. This end and purpose it can accomplish only if it sees its function as a race process and not one confined to narrow, specialized, provincialized ends. It must so organize and interpret human experiences that the resultant environment shall provide not alone equality of opportunity but also stimulus and encouragement for the expression of that individual capacity which looks toward human welfare. This is particularly true for the secondary school, since this unit of the school begins its work during those years of young people when the external manifestations of their individuality are first recognizable, and carries on through the crucial years of their development. The secondary school must be so organized and so conducted as to furnish ways and means for the discovery of these individual tendencies and capacities; it must offer stimulus and encouragement for their development, and provide opportunity for their expression through socially constructive channels. To the accomplishment of these purposes the time element, the subject-matter factor, the methods, and the administration must all conspire. Such is the place of the secondary school in the social order of a democracy.

REFERENCES

BETTS, G. H. Social Principles of Education, pp. 3–30, 55–93.

CHAPMAN, J. C., and COUNTS, G. S. Principles of Education, pp. 1–51.

DEWEY, J. Democracy and Education, pp. 1–27, 94–116, 340–358.

FINDLAY, J. J. The Foundations of Education, pp. 93–137.

INGLIS, A. Principles of Secondary Education, pp. 340–364.

JUDD, C. H. Introduction to the Scientific Study of Education, pp. 14–46.

KILPATRICK, W. H. Source-Book in the Philosophy of Education, pp. 19–54.

KING, I. Social Aspects of Education (entire book).

PETERS, C. C. Foundations of Educational Sociology, pp. 20–40, 167–226.

ROBBINS, C. L. The School as a Social Institution, pp. 1–119.

SMITH, W. R. An Introduction to Educational Sociology, pp. 3–196.

TUFTS, J. H. The Real Business of Living (entire book).

UHL, W. L. Principles of Secondary Education, pp. 1–43, 109–148.

CHAPTER II

THE BACKGROUND

INTRODUCTION

The European point of view. Old World political, economic, and particularly social philosophy presents a striking contrast to the point of view just set forth. Of course there are variations among the European nations, but in the main some such generalization as the following holds true.

In Old World countries governments are considered to exist for the purpose of controlling individual activities. The citizens are to obey laws; they are not to make them. If a certain measure of the popular voice is heard in the making of laws, it is not usually the voice of the great masses but of certain selected classes. It is conceived that it is the prerogative of the few to govern and of the many to be governed; nay, more, it is the duty of the masses to submit to the rule of those called as the masters of men. In Europe, governments derive their just powers by social right and by inheritance. Consent of the governed is not sought; it is compelled. Governments control as an influence outside the individual. Education for the masses is not necessary; in fact, anything more than a rudimentary type is not desirable. Only those who rule need to receive a higher type of learning and education. If occasionally a leader is found within the ranks of the common people, he may be taken from his group and made a superservant to the ruling minority.

The system of education in Europe, therefore, becomes a system stratified into horizontal levels, each for a group or class, and closed at certain fixed points varying according to class, economic, or political status. Not only this, but

control must be centralized; the government at its origin must not only set up the organization but must also attend very minutely to plans for the execution of the educational purpose of the rulers. It must have its hand constantly and directly on the school pulse.

Differentiations in curricula and courses will be necessary, but very rigid prescriptions and standards must prevail within the restrictions set. These differentiations, however, are not so much to provide for differences of intellectual capacities and aptitudes as to give to each social or economic group that training and education which the government thinks is needed for that group. To maintain and enforce these prescriptions large forces of inspectors are necessary.

The teaching class, those in the higher schools particularly, must be given a definite social status, which must be relatively high because they are the makers of leaders in governmental, commercial, and industrial affairs. A good living must be assured to them, but not too good. Provision for their disability and old age must be ample.

There will always be a place for the select private school, — the school for a group, exclusive, aristocratic, but under government sanction or control. Endowed schools, private-venture schools, sectarian schools, will flourish.

Such statements are broad and sweeping generalizations. Not all apply to educational theory and organization in any single country, but, taking them as a whole, such a body of generalizations can be justly made. The particular attitude of the three European countries which have had greatest influence upon secondary education in the United States will furnish evidence in support of these very broad statements.

SECONDARY SCHOOLS IN FRANCE

Beginnings. It is possible to find in France traces of education which might be classed as secondary and which was in effect even before the arrival of Alcuin in the latter part

of the eighth century to establish the famous and rather peripatetic palace school of Charlemagne. The monasteries and the abbeys had their schools, in which, as a matter of course, they taught youth that were in training for the service of the Church; certain municipal schools also had flourished and had become of at least local importance; Roman schools had been established and had prospered among the Gauls. The love of learning and the taste for culture have for long centuries been a characteristic of the people whom we have come to know as the French.

However, it is not until late in the thirteenth century and early in the fourteenth century that any clear-cut distinction between grades of education appears. Influences similar to those which gave rise to the University of Paris stimulated also the growth of colleges in which learning for the laity was made available. Originally these were intended as regional institutions and were made possible by private benefactions and by public funds. Out of the modification of these local colleges arose, for instance, the modern *lycée* Saint-Louis (founded in 1280) and the *lycée* Montaigne (founded in 1314). These were clearly secondary schools, since their purpose was to teach grammar and the subjects preparatory to advanced learning, and even in some cases to begin the teaching of that higher learning. The parish schools, conducted in connection with the cathedrals and ruled over by cathedral authorities, were also distinctly secondary in character, and to them the boys were sent for further preparation before studying philosophy. These are the foundation stones of the present-day secondary-school structure in France.

With the rise of the Jesuits and their development as a teaching body in the sixteenth century came the establishment of secondary-school procedure. Although the Jesuit teachers were suppressed time and again and driven from their places by government decrees, their influence upon French secondary schools is as decidedly marked as is the

royal stamp upon the English Public Schools. The Port Royalists and the Oratorians, also as teaching bodies, put the emphasis on the vernacular and tended to break down the narrow classicism and formalism of the older grammar schools. Thus the provision of educational advantages was largely in the hands of the Church, and the aims of education were made subservient to the needs of the Church.

The Revolution swept away all that was old, and for years the only substitute for the secondary schools and grammar schools of the sixteenth and seventeenth centuries and the early part of the eighteenth century was a series of impossible and unsystematic proposals by the idealists and enthusiasts of the time. Out of these impractical schemes evolved the central schools, which were the stop-gap between the schools of the old days and the modern secondary-school system set up by Napoleon. Whatever the faults of these central schools (and they appear to have been very unsatisfactory to many for several different reasons), they did provide a working basis upon which the modern system was built. They received pupils directly from primary schools; they provided three cycles of work for two years, the pupils in each beginning at twelve years of age; and they prepared their pupils for schools of higher learning. In these respects, therefore, they were secondary schools in the present-day meaning of the term.

Modern French secondary schools. The scheme of public instruction was completely reorganized by the law of May 1, 1802. The central schools were done away with, and *lycées* were established in their places. Secondary education is thus defined by that law: "Every school established by the communes or conducted by private individuals wherein are taught French, Latin, the first principles of geography, of history, and of mathematics, will be considered as a secondary school." Thus were the communal colleges made legally possible, and the two types of French secondary schools appeared.

This law embodies the spirit of the attempt to secure safety for the State through a system of education created under the government. It remained only for Napoleon to centralize control of the system, for the reign of Charles X to create in 1828 the office of Minister of Public Instruction, and for the Third Republic to establish *lycées* for girls in 1880, to round out the idea of State-school organization as found in modern France. All during this period, as through the preceding centuries, the Church carried on its efforts to maintain its hold upon the control of education, but the intensity of the demand for political autonomy, the insistence upon a place for science and other modern subjects in the curricula, the rise to positions of power by the so-called lower classes, the increasing sense of nationalism, together with many other manifestations of an expanding political consciousness, have all resulted in placing the State in absolute legal control of education. So far as legal authority is concerned, the State has the power to make the schools just what it desires, to organize them, administer them, and control them for the maintenance and continuance of French civilization. It is with this object in view that the secondary-school system has become what it is, — an effort to perpetuate French life and culture as a measure of protection for the State.

The Napoleonic reforms of 1802 and 1808 set the models for organization of education in France, and the influence of those reforms has come down to the present day in the form of centralized control of secondary-school organization, details of administration, qualifications of teachers, and programs of studies. Politically France is a republic, but educationally it is an aristocracy. All citizens have a chance to secure education enough to make them fairly intelligent participants in the work of the world, but the opportunity to advance into positions of leadership is very carefully restricted. Liberty, equality, and fraternity make excellent planks in a political platform, but they evidently are not applicable to educational policies.

Boys' secondary schools. The traditional system provided two types of schools for boys in France, to which the term *enseignement secondaire,* or secondary schools, was applied; namely, the *lycée* and the *collège.* The chief distinction between them was the manner of their establishment and support. The *lycée* was a school controlled and financed by the national government. The *collège* was established and supported by a municipality (commune), but was supervised and directed by the National Ministry of Education. Theoretically, the standards for both were the same, and the education provided by each was to be about the same in quantity and quality. Popular sentiment favored the *lycée,* perhaps as much because of its greater prestige and the influence of tradition as because of its actual superiority. A superficial comparison might be made to the effect that the *lycée* was much like the high school in a large cosmopolitan area in the United States, whereas the *collège* was much like the small high school. At least this may illustrate public estimation of the two schools.

Secondary education, strictly speaking, began for the French boy at about the age of ten or eleven. This does not mean that he was not in attendance at a *lycée* or *collège* before that age, however, for nearly all these schools had attached to them one or both of the two divisions of elementary schools: an elementary school for boys of six and seven, and a preparatory school for boys of from eight or nine to ten or eleven. A boy might therefore enter a *lycée* at six and remain to the age of seventeen or eighteen. The actual secondary-school period, by the decree of 1902, was divided into two cycles: the first, four years in length; and the second, three years. The first cycle was divided into two sections: in one, Latin was studied; in the other, it was omitted. The order of grades was reversed so that the second cycle was made up of grades two and one and a final year of philosophy or mathematics. This arrangement is still in practice. Those boys who studied Latin in the first cycle

were eligible for philosophy; the others entered mathematical studies. There might exist also special classes or groups preparing for some special type of school, like a polytechnic school or a military school. These prescriptions were rather rigid, and yet a certain measure of flexibility was apparent.

Entrance to these schools was entirely upon the basis of competitive examinations. They were not free schools, but scholarships could be secured. These varied in value from full board and tuition, through half board and tuition, to tuition with supervised study-room privileges and, finally, tuition only. As suggested here, practically all were boarding-schools, but the tendency is away from this feature. The school day in France now, as before the reforms, is long and strenuous, very little time being allowed for outdoor games and athletics. At all times the boys are under close surveillance, and disciplinary measures are severe and rigid. Exactly how this subordination to authority fits in with the avowed purpose of developing leaders it is difficult to understand; for the boys receive little opportunity to develop self-control, poise, or generalship, because of these restrictions and the completeness of this supervision.

At the end of the course the reward was the *baccalauréat* degree. To attain this reward the French boy must be the academic equal of the sophomore, perhaps of the junior, in American colleges. Discussing this *baccalauréat* degree of the French *lycée* for boys, Farrington says:

> There is one satisfaction about the French degree: it stands for a very definite standard of attainment. Aside from the personal equation involved, the degree from the south is in every way equal to that from the north, while it is perfectly well known that there is wide divergence among the bachelors' degrees from the American institutions. The French secondary course carries the pupil to a point that is reached by the American boy at our best colleges somewhere in the course of his sophomore year, but in France this goal is attained from two to three years earlier. On the other hand, although the French youth possesses a more definite and a more exact array of information, the greater part

TABLE I. PROGRAM OF STUDIES IN FRENCH LYCÉE FOR BOYS[1]

First Cycle

	Class VI		Class V		Class IV		Class III	
	Section		Section		Section		Section	
	A	B	A	B	A	B	A	B
French	3	6	3	6	3	5	4	6
Latin	7		7		6		6	
Greek					3[a]		3[a]	
Modern languages [b]	5	5	5	5	3[a]	4	3[a]	5
History and geography	3	3	3	3	3	3	3	3
Mathematics	2	3	2	4	2	4½	3	4
Natural science	1	2	1	1	1	2½		2½
Ethics					1	1	1	1
Drawing	2	2	2	2	1[a]	2	1[a]	3
Total	23	21	23	21	23	22	24	24½

Notes. [a] Greek is elective. Boys not taking Greek take four hours of modern languages and two hours of drawing.

[b] German, English, Spanish, Italian (Russian, Arabic).

Second Cycle

	Class II				Class I				*Philosophie*		*Mathématiques*	
	Section				Section				Section		Section	
	A	B	C	D	A	B	C	D	A	B	C	D
French	4	4	4	4	4	4	4	4				
Latin	4	4	4		5	3[e]	3		4[e]	2[e]		
Greek	5				5							
Modern languages	2	7	2	7	2	7	2	7	2[e]	3	2	3
History and geography	4½	4½	3	3	5	5	3	3	3½	3½	3½	3½
Mathematics	2	2	4½	4½	2[d]	2[d]	5	5	2[e]	2[e]	8	8
Natural science			4½	4½			5	5	7½	7½	9	9
Drawing	2	2	4	4	[d]	[d]	4	4	2[e]	2[e]	1 2[e]	1 2[e]
Philosophy									8½	8½	3	3
Total	23½	23½	26	27	23	21	26	28	19½–10[e]	22½–6[e]	26½–2[e]	27½–2[e]

Notes. [e] 2 hours Latin additional is optional.

[d] Optional 2 hours additional in mathematics and 2 hours in drawing.

[e] Optional.

[1] A. Inglis, *Principles of Secondary Education*, p. 238. Used by permission of and by arrangement with Houghton Mifflin Company, the authorized publishers.

of his thinking has been done for him. As I have visited scores of classes in the lycées and collèges, this fact has been most forcibly brought to my attention. The mind of the French student is receptive rather than creative or even independent. It is not until after the completion of the secondary course that the latter characteristics begin to come to the fore. They evolve in spite of the method of the educational system rather than on account of it. This is the heritage that Loyola and his followers have left, and their influence is still strong upon the French character, far stronger than the ardent republican of today would have you believe, or would willingly admit even to himself. In its outward characteristics, the French secondary school system bears evidence of Napoleon's master hand, but deep down beneath the surface the methods of work and the fundamental ideals still reveal the impress that Jesuit control imposed upon them.[1]

The examinations for this degree were vigorous. One part of them was oral, another part written, the oral examinations being open to the public. Usually some eight or nine subjects were covered in comparatively short periods of time. While the candidate must therefore be alert and quick to respond, the questions were largely of a sort to test the factual content and power of recall of the candidate rather than to indicate any development of ability to do original thinking or even rote thinking. It was a tapping process rather than a testing process. Many boys failed to pass the examinations, however, and any youth who at seventeen or eighteen could successfully stand such a grilling deserved every last part of the reward which he received.

Girls' secondary schools. Provision of secondary schools for girls began after 1880. This provision took three forms: *lycées*, communal *collèges*, and secondary courses established for girls by the local authorities, sometimes financially supported by the State. These were really gradations which normally came about as the effort was made to organize secondary educational privilege for girls, the *lycée* being the

[1] F. E. Farrington, *French Secondary Schools*, p. 142. Longmans, Green & Co., 1915.

TABLE II. PROGRAM OF STUDIES IN FRENCH LYCÉE FOR GIRLS[1]

	First Cycle			Second Cycle	
	Class			Class	
	I	II	III	IV	V
Domestic economy and hygiene			[a]		
Drawing	2	2	2	E 2	E 2
Ethics			1	1	
French	5	5	3.5	3	2
Geography	1	1	1	1	1
Gymnastics	1.5	1.5	1.5	E 1.5	E 1.5
History	2	2	2	2	2
Law (common)					0.5
Literature, ancient				E 1	
Literature, modern					1
Mathematics	2	2	2	0.5 [b]	0.5 [b]
Modern foreign languages	3	3	3	3 [b]	3 [b]
Psychology					2
Science	1	1	2	2.5	3
Sewing	2	2	2	E 2	E 2
Singing	1	1	1	E 1	E 1

Notes. [a] One-hour lecture, twelve times during this year.
[b] Additional hours may be selected. E = Electives. Figures indicate hours per week.

consummation of the evolutionary process. Organized work was to be found only in the *lycées* and the *collèges*. This organized work covered a period of five years instead of seven, and as in the boys' schools preparatory and elementary classes were usually organically connected with the *lycée* or *collège*. The age of admission to the girls' secondary schools was twelve, and thus the entire course could be completed by the time the girl was seventeen years old, the course being divided into two parts, one of three years and the other of two. In some of the better and more important girls' *lycées* a sixth year was provided, which prepared definitely for the girls' normal schools, where teachers for the elementary schools were trained. The subjects studied by the girls show a striking lack in the field of the classics, in

[1] A. Inglis, *Principles of Secondary Education*, p. 241. Used by permission of and by arrangement with Houghton Mifflin Company, the authorized publishers.

spite of the fact that the majority of girls appear to have attended these schools for cultural rather than for practical purposes. The range of subjects offered was wide, and the amount of time devoted to them weekly (except in the cases of French and modern languages) would appear to be insufficient to secure any very extended or intensive knowledge of them. These were tuition schools, and scholarships were few; admission was by competitive examination. The atmosphere of the girls' schools has been described as genial, with a spirit of expression rather than repression, of joyous life and cultured grace, in striking contrast to the stern and rigorous tone of the schools for boys. At the end of the third year the successful students were presented a certificate of secondary study; at the completion of the five-year course the reward was the secondary diploma, a document much below the worth of the *baccalauréat* from the schools for boys, and of course secured by a much lower standard of requirements.

Other secondary schools. There was still a third type of school in France before the World War, the higher primary school, which merits notice as a secondary school. This institution arose in response to a demand for some sort of school beyond the elementary which would meet the demands of the common people, particularly those of the industrial group. Such higher primary schools were made possible in 1833, but they amounted to very little until 1878, when money was appropriated for them by the national government. Since that time they have increased and expanded to provide at least a modicum of education in commerce and industry, although the emphasis has continued to be upon the elements of a general education. As a result two types of school were legalized by the law of 1892: one to be known as the higher primary school, which retained pupils to their fifteenth year, the standard of admission to which was possession of the primary-school certificate; the other to be a vocational school, which should provide an education in

subjects related to commerce and industry. This type of school, however, up to the present has played a very unimportant part in the program of French education, particularly of secondary education.

Here arises the question of what has been considered a secondary school in France. The simple and straightforward answer would seem to be that the secondary school is the institution of learning for the upper social class, and chiefly for those who possess a moderate amount of wealth. The field of secondary education is delimited by social and economic boundaries. At one time the hurdles for admission to the secondary schools were built up by the Church; in these later and modern times it is the members of the professions and the government officials who have set up the barriers. It has been said by a Frenchman that "the middle class citizen puts his child in a *lycée*, not in order to make him a learned man, but in order that his son shall not be in the same institution with the son of his servant or his *concierge*." The chief function of the *lycée* and of the *collège* is to prepare their students to enter governmental military, naval, and engineering schools and the schools or colleges of arts, law, medicine, or science in the universities. The *lycée* and the *collège* are the servants of the political and professional classes within the nation.

Tendencies of the reform.[1] Secondary education has been organized along these lines since the law of 1902. No changes of importance took place from that time until after the World War. By 1923 some of the agitation over the restricted nature of secondary education had crystallized into defined policy. The agitation still continues, although the years 1923 and 1924 produced certain modifications worthy of note. These new programs and the changes in administration may be considered as reforms, regardless of

[1] Much of this section has been drawn from I. L. Kandel's *Reform of Secondary Education in France*. The quotations are from the official documents as there translated.

TABLE III. PROGRAM OF STUDIES IN FRENCH LYCÉES FOR BOYS. THE REFORM PLAN, 1923 [1]

	Sixth Class	Fifth Class	Fourth Class	Third Class	Second Class			First Class			Philosophie	Mathématiques
					Classical		Modern	Classical		Modern		
					With Greek	With no Greek		With Greek	With no Greek			
French	4	4	3	4	3	5	5	3	5	5		
Latin	6	6	5	4	4	4		4	4			
Greek			3	3	4			4				
Modern foreign language	4	4	3	3	2	4	8(4 + 4)	2	4	8(4 + 4)	2	2
History and geography	3	3	3	3	3	3	3	3	3	3	$3\frac{1}{2}$	$3\frac{1}{2}$
Mathematics	2	2	2	3	3	3	3	4	4	4	2*	$9\frac{1}{2}$
Science	1	1	1	1	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	3	3	3	5(3 + 2)	$6\frac{1}{2}(4\frac{1}{2}+2)$
Philosophy											$8\frac{1}{2}$	3
Library studies											2	
Drawing	2	2	$1\frac{1}{2}$	$1\frac{1}{2}$	2*	2*	2*	2*	2*	2*	2*	2*

* Optional.

[1] Compiled from I. L. Kandel's *The Reform of Secondary Education in France*, pp. 81–83.

whether or not they are deemed improvements. In general the organization remains as under the law of 1902. The important changes have to do largely with the programs of studies. In the program for boys the rather arbitrary division into cycles does not appear; the official decree of May, 1923, specifically states that "secondary instruction comprises a course of study covering seven years." The division into A and B groups no longer exists; for "all pupils follow the same course of study during the first four years," [1] and "in the second and first classes the pupils have a choice between classical and modern-language instruction." In these classes also drawing has been made optional, and science, mathematics, history, and geography are the same for classical students as for other students. In consequence of this nearer approach to uniformity the classes in philosophy and mathematics are open to all students completing the work of the first class, no matter what their previous elective choice may have been. It is noticeable that the subject of ethics does not appear in the time-schedule as presented in the *arrêté*. Some other minor changes of administration and management have been made by the official *arrêté* from the office of the Minister of Public Instruction.

The decree of March 25, 1924, proposed radical changes in the secondary schools for girls. The purpose of these changes was to provide a secondary course for "an élite among the girls" which would be the same in form as the one for boys, and which would lead toward the *baccalauréat* as "the crown of this course." It also provides for the continuance of "a form of secondary education for girls which has undergone a test of forty years," "for the large majority of girls who only look forward to the activities of the home." The reform plan divides secondary instruction for girls into two sections, therefore: one which "will lead the girls to the

[1] This was tentatively changed in August, 1924, permitting emphasis on modern foreign language from the beginning.

baccalauréat," and another which will lead to the *diplôme de fin d'études,* the document decreed in 1880. At the end of the fourth year the *certificat d'études secondaires* can be secured by examination. It has been necessary to increase the length of the secondary-school course for girls to six years and to provide throughout that time a common course in French, modern foreign languages, science, history and geography, and drawing. For those going on for the *baccalauréat* special additional courses are provided. The additional courses for the other group differ little from the traditional program as previously decreed. The program appears rather complicated, but is really very simple: one common core; in addition, choice of one route from three leading to the *baccalauréat* or the route to the *diplôme de fin d'études.* The *arrêté* also anticipates the development of *classes de philosophie* or *classes de mathématiques,* following the programs for boys, as demands make them necessary. As in the program for the boys' secondary schools, it is noticeable that the subject of ethics does not appear in the time-schedule. The execution of these plans will place secondary education for girls on a parity with that for boys and will provide liberal opportunity for the higher education of women in France.

Perhaps the most radical proposals in the reform are those affecting the *écoles primaires supérieures.* These are the schools intended for those pupils unable to afford the tuition fees required in the secondary schools. The revision of 1919 makes these schools similar to the junior high schools in the United States. Fees are charged in these schools; but State scholarships are available on the basis of a competitive examination, while board and clothing may be provided by the State if need is proved. The aims appear to be the discovery of vocational aptitudes, the continuance of general education, and training in moral and civic attitudes. Admission may be secured at twelve years of age upon completion of the elementary-school curriculum and

TABLE IV. PROGRAM OF STUDIES IN FRENCH LYCÉES FOR GIRLS. THE REFORM PLAN, 1924[1]

Classe de Sixième

Section for the *Baccalauréat*	Common Courses	Section for the Diploma
Special Courses and Hours in Addition to the Common Courses		Special Courses and Hours in Addition to the Common Courses
Hours	*Hours*	*Hours*
	French 4	Supplementary exercises 1
	History 2	
	Geography 1	
	Modern languages . 3	
	Mathematics . . . 2	
	Natural sciences . 1	
	Drawing 2	
	Dressmaking . . . 1	Dressmaking . . . 1
	Music 1	
Latin 4	Total in common 17	2
Total for the section . . 21 hours		Total for the section . . . 19 hours

Classe de Cinquième

Section for the *Baccalauréat*	Common Courses	Section for the Diploma
Special Courses and Hours in Addition to the Common Courses		Special Courses and Hours in Addition to the Common Courses
Hours	*Hours*	*Hours*
	French 4	French 1
	History 2	
	Geography 1	
	Modern languages . 3	
	Mathematics . . . 2	
	Natural sciences . 1	
	Drawing 2	
	Dressmaking . . . 1	Dressmaking . . . 1
	Singing 1	
Latin 4	Total in common 17	2
Total for section . . . . 21 hours		Total for section . . . . . 19 hours

[1] I. L. Kandel, *The Reform of Secondary Education in France*, pp. 146–149.

Classe de Quatrième

Section for the *Baccalauréat*	Common Courses	Section for the Diploma
Special Courses and Hours in Addition to the Common Courses		Special Courses and Hours in Addition to the Common Courses
Hours	*Hours*	*Hours*
	French 3	French 2
	History 2	
	Geography 1	
	Modern languages . 3	
	Mathematics . . . 2	
	Natural sciences . 1	
	Drawing 1	Drawing 1
	Dressmaking . . . 1	Dressmaking . . . 1
	Singing 1	
Latin 3		4
Greek 3	Total in common 15	
Total for section . . . . 21 hours		Total for section . . . . . 19 hours

Classe de Troisième

Section for the *Baccalauréat*	Common Courses	Section for the Diploma
Special Courses and Hours in Addition to the Common Courses		Special Courses and Hours in Addition to the Common Courses
Hours	*Hours*	*Hours*
	French 3	French 1
	History 2	
	Geography 1	
	Modern languages . 3	
	Mathematics . . . 3	
	Natural sciences and hygiene 1	
	Drawing 1	Drawing 1
	Dressmaking . . . 1	Dressmaking . . . 1
	Singing 1	
Latin 3		Ethics 1
Greek 3	Total in common 16	Domestic economy $\frac{1}{2}$
Total for section . . . . 22 hours		Total for section . . . . $20\frac{1}{2}$ hours

Classe de Seconde

Section for *Baccalauréat*			Common Courses	Section for the Diploma
Special Courses and Hours in Addition to the Common Courses				Special Courses and Hours in Addition to the Common Courses
With Latin and Greek	With Latin	With Modern Languages		
Hours	*Hours*	*Hours*	*Hours*	*Hours*
	French . . . . 2 First modern language 1	French . . . . 2 First modern language . . . . 1 Second modern language . . 3	French . . . . . 3 Modern languages . 2 History . . . . . 2 Geography 1	French 1
			Total in common . 8	
Greek . . . . . 3 Latin . . . . . 3 Mathematics . . 3 Physics and chemistry . . . . . $2\frac{1}{2}$	Latin . . . . . 3 Mathematics . . 3 Physics and chemistry . . $2\frac{1}{2}$	Mathematics . 3 Physics and chemistry . . $2\frac{1}{2}$		Natural history . . . 1 Ethics . . . . . 1 Mathematics . . . . 1 Physics and chemistry $2\frac{1}{2}$ Ancient literature . . 1 Everyday law . . . $\frac{1}{2}$
Total for section $19\frac{1}{2}$	$19\frac{1}{2}$	$19\frac{1}{2}$		Total for section . 16

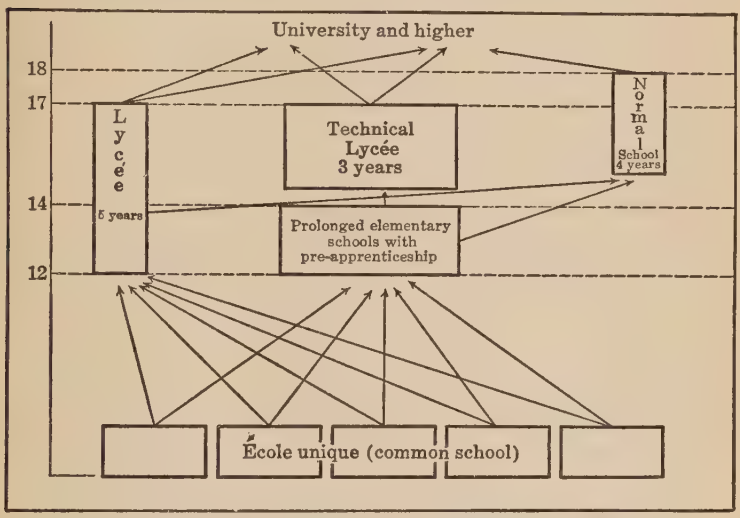
OPTIONAL COURSES

Drawing . . . . 2 Dressmaking . . 1 Singing 1	Drawing . . . 2 Dressmaking . . 1 Singing 1	Drawing . . . 2 Dressmaking . . 1 Singing 1		Drawing . . . . . 2 Dressmaking . . . . 1 Singing . . . . . 1 Additional modern language 3

Classe de Première

Section for the *Baccalauréat*			Common Courses	Section for the Diploma
Special Courses and Hours in Addition to the Common Courses				Special Courses and Hours in Addition to the Common Courses
With Latin and Greek	With Latin	With Modern Languages		
Hours	*Hours*	*Hours*	*Hours*	*Hours*
	French 2	French 2	French 3	Modern languages . . 1
	First modern language 1	First modern language 1	Modern languages . 2	
		Second modern language . . . 3		
			Total in common . 5	
Greek 3				Psychology applied to ethics and education 1
Latin 3	Latin 3			Foreign literature . . 1
Mathematics . . 4	Mathematics . . 4	Mathematics . . 4		Natural history . . . 1
Physics and chemistry . . . 3	Physics and chemistry . . 3	Physics and chemistry . . 3		Mathematics 1
History and geography . . . 3	History and geography . . 3	History and geography . . 3		Physics and chemistry 3
				History and geography 4
Total for section 21	21	21		Total for section . . 17
OPTIONAL COURSES				
Drawing 2	Drawing 2	Drawing 2		Drawing 2
Dressmaking . . 1	Dressmaking . . 1	Dressmaking . . 1		Dressmaking 1
Singing 1	Singing 1	Singing 1		Singing 1
				Additional modern language 3

upon securing the certificate of primary studies. Completion of the curriculum by the fifteenth year, or later, upon passing a satisfactory written, oral, and practical examination, is signalized by a certificate of higher elementary studies. Graduates of these schools who are between sixteen and eighteen years of age are eligible to compete in examination for traveling scholarships. These are intended for pupils



PROPOSED MODIFICATION OF FRENCH SCHOOLS

who expect to pursue industrial and commercial careers, in order to permit them to improve their command of a foreign language. The program of studies is three years in length. For the first year the pupils all pursue a common curriculum. Beginning with the second year and through the third the work is differentiated according to four different curricula for the boys and three for the girls. Pupils who complete the general curriculum are given opportunities to transfer to appropriate divisions in a secondary school. Graduates in the other curricula enter the lower branches of the civil

TABLE V. HIGHER ELEMENTARY SCHOOLS[1]

COURSES FOR BOYS

	COMMON COURSE	GENERAL COURSE		AGRICULTURAL COURSE		INDUSTRIAL COURSE		COMMERCIAL COURSE	
	1st Yr.	2nd Yr.	3rd Yr.	2nd Yr.	3rd Yr.	2nd Yr.	3rd Yr.	2nd Yr.	3rd Yr.
Moral instruction, civics, everyday law, economics	1	1	1	1	1	1	1	1	1
French	4	4	4	3	3	3	3	4	4
Modern languages	3	4	4					4	4
History	1	1	1	1	1	1	1	1	1
Geography	1	1	1	1	1	1	1	1	1
Mathematics	3	3	3	3	3	3	3	3	3
Mechanics				1	1	1	2		
Physics and chemistry	2	2	2	3	3	3	3	2	3
Natural sciences and hygiene	1	1	1	1	1	1	1	1	1
Technology				1	1	1	1	1	1
Agriculture				2	2				
Artistic design and modeling	2	2	2			2	2		
Geometrical design	1	1	1	1	1	3	3		
Writing	1*								
Stenography and typewriting	3*							3	3
Bookkeeping				1				3	3
Singing (1 hour optional)	2	2	2	2	2	2	2	2	2
Gymnastics	2	2	2	2*	2*	2*	2*	2	2
Shopwork, laboratory, agriculture, horticulture	4	4	4	9	9	12	12	1	1
Total	31	28	28	32	31	36	37	29	30
Compulsory	26	27	27	29	28	33	34	28	29
Optional	5	1	1	3	3	3	3	1	1

* Optional.

service. It is the expressed intention of officials that these schools shall provide the noncommissioned officers in the army of commercial and industrial workers. These officials, nevertheless, assert and wish it understood that these schools are not vocational. At any rate they are rather definitely organized, they have come under official recognition, and they are beginning to have influence and some sort of desirable reputation.

[1] I. L. Kandel, *The Reform of Secondary Education in France*, p. 154.

TABLE VI. HIGHER ELEMENTARY SCHOOLS[1]

COURSES FOR GIRLS

	COMMON COURSE	GENERAL COURSE		COMMERCIAL COURSE		DOMESTIC-ARTS COURSE	
	1st Yr.	2nd Yr.	3rd Yr.	2nd Yr.	3rd Yr.	2nd Yr.	3rd Yr.
Moral instruction, civics, everyday law, economics	1	1	1	1	1	1	1
French	4	4	4	4	4	3	3
Modern languages	3	4	4	4	4		
History	1	1	1	1	1	1	1
Geography	1	1	1	1	2	1	1
Mathematics	3	3	3	3	3	2	2
Physics and chemistry	2	2	2	2	2	2	2
Natural sciences and hygiene	1	1	1	1	1	1	1
Technology				1	1		
Artistic design and modeling	2	2	2			2	2
Geometrical design	1	1	1	1	1	1	1
Writing	1*			1	1		
Stenography and typewriting	3*			4	4		
Bookkeeping				2	2		
Domestic economy		1	1			1	1
Singing (1 hour optional)	2	2	2	2	2	2	2
Gymnastics	2	2	2	2	2	2	2
Lingerie, clothing, fashions, cookery, household management, garden, farm, infant care	6	6	6			12	12
Total	33	31	31	30	31	31	31
Compulsory	28	30	30	29	30	30	30
Optional	5	1	1	1	1	1	1

* Optional.

Estimation. So far the reforms which have come about since the war have not been such as would greatly modify the old situation. There has been an effort to secure identity between the curriculum of the elementary schools and that of the preparatory schools attached to the *lycées*. Thus a better articulation with the work of the *lycée* and of the *collège* may be effected. There has been an extension of educational advantages for girls. It has also been pro-

[1] I. L. Kandel, *The Reform of Secondary Education in France*, p. 155.

posed to extend the system of scholarships, but to continue them on a competitive basis. Much discussion has taken place about the inclusion or omission of the classics in the secondary-school curricula; up to this time they have not only remained but have acquired even a strengthened position. Such vocational or applied education of a secondary sort as is to be provided is to be kept in separate schools, although their position has been greatly strengthened and their work has been given better articulation with the secondary schools. There is strong resentment against efforts to present such practical work in the traditional schools, for fear, so it is claimed, that the purity of the culture will be contaminated. Above all, it has been decided that secondary education is to be considered as the means by which, to quote M. Ribot, "to form a directive élite." The sole aim of all work in secondary schools is to be considered as the development of general culture. Says Kandel:

> The problem involved here was whether secondary education should be thrown open to the masses or whether it should be reserved for an élite drawn from all classes of society, the poor being assisted by means of scholarships and maintenance grants. On the whole the majority of opinion was in favor of retaining secondary education for the training of an élite.[1]

How can it be expected that under such a policy there will develop the spirit of democracy in education when the very objective set up for it is to develop a series of stratified institutions to select and isolate one group as over against another? Even in its reforms of education France remains aristocratic. The situation is admirably summed up by Kandel when he writes as follows:

> For the present then it has been decided that the proper function of secondary education is to impart a general liberal education for an élite, in which able pupils from the elementary schools are to be given a larger place than hitherto. Further, this general liberal education is to have a classical foundation, partly

[1] I. L. Kandel, *The Reform of Secondary Education in France*, pp. 11, 12.

because of the inherent value of the classics themselves, partly because they are the sources of all subsequent civilization, partly because of their intimate association with French culture and civilization. A liberal education of this kind is to furnish at once a training for the mind, to cultivate judgment, taste, and standards of appreciation; it is to be fundamentally a general intellectual training, disinterested, as the French say, and therefore irrespective of the future occupation of the pupils. It implies accordingly postponement of specialization, and that not merely postponement of vocational choice but postponement of selection in the purely intellectual studies. Hence options are not offered until the fifth year, and the principle accepted in this country that the curriculum must be adapted to the varying capacities and interests of a diversified student body is rejected. Secondary education is thus highly selective not merely because a standard conception of the meaning of a liberal education prevails but also because it is feared that any other course would tend to cater to mediocrity.[1]

The leaders in France conceive that French civilization and culture are grounded in the classics and the classical tradition. Under such a conception there is no alternative to such an organization and administration of secondary-school advantages as prevails in France. Certain it is that for such of the youth as finally emerge out of this discipline through the classics one cannot but have the greatest admiration. They have developed an air, an urbanity, a poise, which set them apart. They are in truth an élite. Beyond this one cannot help but wonder if a process so highly selective through the use of a single instrument does really find and develop more than a tithe of all the superior individuals. Does such a system, dependent so largely upon economic status and factual knowledge of academic material, develop culture in the best sense, or are the result and the product mere erudition? To be sure, it is not easy to realize the French conception of culture, based as it is directly and immediately upon Latin civilization and the classical tradition. The close relation existing between French civilization and the ideals as well as

[1] I. L. Kandel, *The Reform of Secondary Education in France*, p. 30.

the language of Rome makes a restricted and particularized program defensible on the basis of function rather than discipline. At any rate, little has been borrowed by the United States from the French educational program and organization. One state, New York, has a state department of public instruction organized as a university with regents, clearly a borrowing from France. Some of the plans and procedures affecting centralization, and control from government offices, may also have had a French origin. The plans of Jefferson and some of the educational philosophy of Franklin have similarities with the educational organization and thought of France in their day. Perhaps French standards in the field of the *beaux-arts* have influenced, to a degree, methods and criteria in the same field in the United States. The direct and self-evident influences, however, of French educational thought upon that in the United States are exceedingly difficult to trace. Such French influence as has been felt has been most probably in matters of theory, of subjective standards, of atmosphere, or of ideals rather than in more tangible matters. Possibly the United States is the loser thereby; and yet while it may be true that the danger for democracy in education is perpetuation of mediocrity, there is the danger for aristocracy in education of perpetuating and accentuating class consciousness with its hatreds and spites and social venom. Organization of education along class lines does not appear to be the most efficient means by which to continue and to develop the North American ideal.

SECONDARY SCHOOLS IN GERMANY

Influence and variety. Although the English schools furnished the pattern upon which American schools were formed, German influences have continually been at work modifying, supplementing, and redirecting education in the United States, particularly during the last century. The nineteenth century opened with the American public schools

at their worst and the German schools at their best. New ideas of democracy were spreading in each country, both were at work regenerating secondary schools in the light of the new philosophy, and both were attempting to build nonsectarian schools, controlled and supported by the government. The United States was a new country with no great background of culture, and it naturally borrowed from its more efficient neighbor. After the liberal movement died in Germany in 1848, the paths of the two nations became increasingly divergent: Germany increasingly subordinated the individual to the State and strove for discipline, conformity, and an illiberal classical culture; the United States increasingly emphasized the individual and strove for a broad, liberal culture. Thus borrowings of the United States from Germany during the period of coinciding democratic tendencies were of immense value, but those from the period of reaction have had a hampering rather than a liberating influence. Fortunately the tide of German immigration was drawn from the liberal element, so that the most reactionary personal influence upon American education was exerted by those of our own citizens who had "finished" their education abroad. The four chief streams of influence may be summarized as follows: (1) The early organization of schools in New England shows as great similarity to continental Protestant schools as to English schools, for the latter were under the patronage of royalty, the aristocracy, and the Church, all of which the Puritan desired to leave behind. Current Protestant literature and schools in Holland, with which the Pilgrims were familiar, established essential contact. (2) At the beginning of the nineteenth century, when the schools of Massachusetts were being reorganized and were becoming a pattern for the nation, the study of German teacher-training by James Carter, of German classroom practice by Henry Barnard, and of the German State-school system by Horace Mann exerted great influence. (3) German educational philosophy as taught by Pestalozzi, Froebel, Hegel,

Rosenkranz, and Herbart has been exploited in this country by Francis Parker, W. T. Harris, Elizabeth Peabody, Charles de Garmo, and the McMurrys; German psychological experiments have stimulated American psychologists; and recently vocational education owes much to the work of Kerschensteiner. (4) Many American educational leaders have completed their education in German universities.

German schools have ever had the support of the government. They have ever been founded upon an educational philosophy; hence objectives have always been known. German schools have had a rather continuous development, but have shown a multiplicity of types, owing to great variety in state government. Homogeneity has resulted from common knowledge of educational practice, a common curriculum, and uniform rules, but the schools present many divergent characteristics and reflect in many ways the community in which they are situated; hence it is often misleading to speak dogmatically of German secondary schools.

The older schools. Paulsen says, "In ancient times the individual was educated for the State, in the Middle Ages for the Church, and in modern times for himself." Thus the earliest secondary schools in Germany were the monastery and cathedral schools, for the only class that needed secondary education in medieval times was the clergy. The aristocracy were educated for war by the apprenticeship method, but occasionally supplemented this education by attending the Church schools. The seven liberal arts, consisting of the trivium (grammar, rhetoric, and dialectic) and the quadrivium (geometry, arithmetic, music, and astronomy), comprised the curriculum, and the school was enlivened by singing, reading aloud, and writing. A surprising number of students attended these schools; but the rise of the universities about the thirteenth century robbed them of both curriculum and attendance, for in many cases preparatory schools (*paedagogia*) were attached to the universities. In

the cities the guilds had schools to give training in the trades, and some of them persist in modified form to the present day.

With the rise of cities came city schools founded by the municipality and not dominated by the Church. The city furnished the building and the site; the master contracted to furnish instruction and hired his own assistants. These schools taught the "elements," Latin, and "the Great Authors" (Aristotle, Quintilian), but there was no hard and fast line between elementary, secondary, and university education. Many private elementary schools sprang up to prepare for these city schools, which tended to replace the cathedral schools in prosperous German cities; for example, Nuremberg in 1485 had four city schools, with four masters, twelve ushers, two hundred and forty-five paying pupils, and nearly as many free scholars.

Rise of Gymnasien. With the coming of the Renaissance the German youth passionately rejected these older schools. The rediscovery of classical literature developed a new secondary content, and schools became classical, æsthetic, and aristocratic. Following swiftly on the heels of this awakening, the Reformation developed two Protestant movements that concerned secondary education. One group, represented in England by the Puritans and in Germany by Luther and Zwingli, rejected that "cursed, conceited, wily heathen" Aristotle, and with their uncompromising faith and very moderate esteem for culture left little for the secondary schools but a study of dogma and theology, together with Latin and Greek, which were the tools of theological study. The other group, led by Erasmus, Reuchlin, and Melanchthon, fostered the new Protestant movement against the destruction of all culture. Under the influence of both these movements Latin grammar schools were established, and in 1528 the first general school regulations were promulgated for the electorate of Saxony. These ideas of school organization spread over all Protestant Europe outside of England and were undoubtedly known to those Puritans who came to

America. There were city schools, managed by the city council, with the master usually the town clerk, and State schools, founded by the sovereign for the purpose of training gifted children for public service. In the latter the pupils, who engaged to serve the sovereign for life, pursued a five-year or six-year curriculum of classical content, and they often entered the university. These State schools were similar to the Great Public Schools of England in organization and curriculum, but were under the control of the State and helped to build up the tradition that education is the business of the State. They were often called *Gymnasien.*

In the early stages of development these State schools had three forms (*loca,* indicating the portion of the room each group should occupy): (1) elementary, teaching reading and writing; (2) middle, teaching the rudiments of Latin grammar; (3) upper, dealing with classical study and imitation of Latin style. Soon these forms tended to subdivide into the first graded secondary school and into a separate elementary school required for entrance to the *Gymnasium.*

By 1538 the *Gymnasium,* as established by Sturm at Strasbourg, had reached its typical form. Its motto, *sapiens atque eloquens pietas,* indicated its curriculum, for, in the jargon of the day, *sapientia* meant "science"; *pietas,* "pure doctrine"; and *eloquentia,* "linguistic ability." It was a carefully graded school, divided into from six to ten forms with a very definite curriculum preparing for the university. Latin was the language of the secondary school as well as of the university, and the only universally understood tongue; hence the ability to write or speak correct Latin was the mark of an educated man. It was the only door to classical learning, for printed translations of the classics were frowned upon; it was a living language, spoken by the world of letters, and its mastery was necessary for positions of honor in the State. School theatricals in Latin, written by the master upon some religious theme, occupied a prominent place. There was much rote memory work, group singing, and for-

mal argumentation. This classical Protestant *Gymnasium* remained little changed until the reorganization of education at the beginning of the nineteenth century.

Catholic schools of this period were not founded by the city or by the State but by the Jesuits. The *Ratio Studiorum*, a carefully worked-out plan of organization and curricula, based upon the humanistic Protestant schools described above, was the culmination of this type of school. These schools still persist, both in America and in Germany, but they are no longer the dominant type. The institution was entirely under the control of the Society of Jesus, but the expenses were usually paid by the territorial government. There were three groups of pupils: novices, scions of nobility, and day pupils from the town. The latter shared only in the instruction given gratuitously. The *Ratio Studiorum* has never been fundamentally revised, although minor changes were authorized in 1832 and 1906, and there is now more possibility of local variation. While these schools are considered colleges in America, they usually have preparatory schools attached. Mild discipline, carefully planned methods and curricula, well-trained teachers, and good financial support caused early success; a suspicion of the newly discovered sciences, too fixed a program, too absolute subordination of the individual to authority, and the tendency of the Society of Jesus to mix in politics caused their suppression and slow recovery.

Both these schools, Catholic and Protestant, tended to develop a schism between the educated and the uneducated classes and to perpetuate aristocratic government. During the time of their ascendancy the neglect of the vernacular prevented the development of any native literature and sadly hindered the development of science. Certainly the achievements of Shakespeare and Bacon would have been impossible in the society created by these schools. It was only with the reorganization of German education at the beginning of the nineteenth century that national consciousness awoke.

Rise of Realschulen. Germany, under the leadership of Fichte, turned to education as a means of regenerating the nation after the defeat of the German military machine by Napoleon at Jena. Secondary schools up to this time had not sought to release the mind; rather they had attempted to bind the mind to the classical culture. While the *Gymnasium* continued in favor, the old Latin grammar and city schools, which were not college-preparatory schools, began to disintegrate, and in their place rose the *Realschule*. This school is the one most like the cosmopolitan high school of America. Its supporters in the early part of the nineteenth century, Humboldt, Schleiermacher, and Hegel, advocated all-round education and preparation for leadership in the community. The rapid rise of the commercial class in both numbers and wealth and the spread of democratic tendencies favored the extension of this school. It was officially recognized in 1832 by the establishment of "leaving-examinations," successful completion of which gave access to higher appointments in the post office, forestry, and architecture, and permitted only one year of compulsory military training in the army. The examinations were nonclassical, consisting of written and oral examinations in German, French, mathematics, natural science, history, and geography, while Latin and English might be offered as alternative subjects. The new developments in science, the spread of French as the literary and diplomatic language of Europe, displacing Latin as a living language, helped to make these schools popular, so that many cities, following the French idea of *collèges communaux*, established *Realschulen*.

After 1848 the liberal movement in Germany declined, and the *Realschulen* were considerably curtailed. The first official Order of Studies in 1859 made the school (*Realschule I Ordnung*) a nine-year school with Latin compulsory throughout. It gave the *Realschule* the same footing as the *Gymnasium* except that the *Realschule* did not admit to the universities, being considered essentially a preparatory school for higher

technical schools. The *Realschule II Ordnung* was made a six-year school, shorn of its leaving-examination privileges; it became a city school, not a State school, and was distinctly inferior in esteem and privilege. Two years before Massachusetts adopted the idea in 1827, German local boards of school control were made nonsectarian, and secondary-school teachers were given the rank of independent professors, freed from examination by the clergy; thus no secondary school could be taught except by the holder of a State certificate. The principle of State inspection of schools, State control of curriculum and instruction, and State control of the teacher was then established. Between 1834 and 1901 the only door to the university was through the leaving-examination of the *Gymnasien*, and graduation from the university was a prerequisite to all higher State positions. Although the curriculum of the *Gymnasien* was somewhat liberalized at this time by the introduction of science and mathematics, they remained essentially classical schools. The leaving-examination was partially conducted in Latin; it required a mastery of the classics, ability to read and write Greek intelligently, and to compose a graceful Latin essay. There were also examinations in mathematics, two modern languages, and science. Ability to express oneself in German was at one time much emphasized, but the linguistic and classical content gradually came to receive the emphasis.

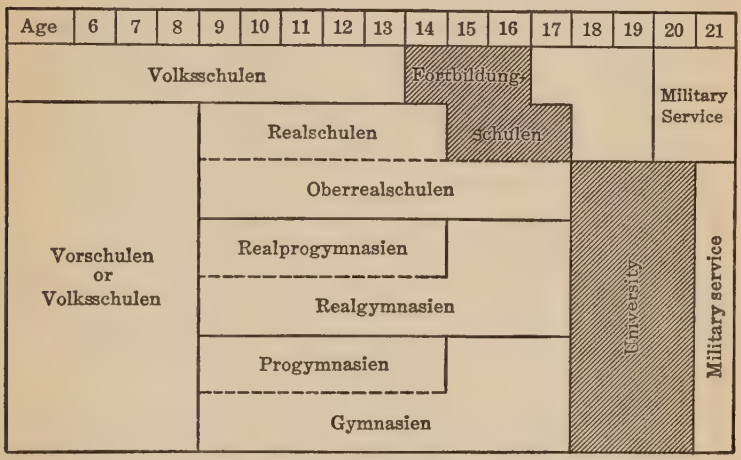
Throughout the century the struggle of the engineers and commercial classes against the landed aristocracy and official class centered about secondary education, for here was the key to the personnel of the government. In 1901 the *Oberrealschule*, now Latinless, won the right to entrance to the university for its graduates. *Via modernorum* became of equal worth with *via antiquorum*. The supporters of the *Gymnasium* were willing to accord this right to the *Oberrealschule* in self-defense, to save their classical program, since the emperor William II was in favor of making German a major subject in all college-preparatory education.

State control of education had steadily increased for a century until under Bismarck it had come to be recognized that ultimate control of a people lies in control of their thinking, and thus education became a political instrument for indoctrination of nationalism. Restriction of the personnel of government to graduates of the *Gymnasium*, with its high fees and severe classical discipline, restricted control of government to a small class, which stifled liberal tendencies in education. Thus there became fastened on the State a two-track system of education: one, comprising 9 per cent of the pupils, prepared for the university; the other, comprising 91 per cent of the pupils, prepared for subordinate positions only. Between the two there was no official bridge.

Traditional forms. Throughout Germany education is a State function, directed by a Minister of Religious and Educational Affairs, but separated into three distinct departments: religious education, secondary education, and elementary education. The control, finance, and administration of elementary education is largely in the hands of the local authorities and, particularly in large cities, does not differ very materially from elementary education in America. The system consists of the eight-year *Volksschule*, the pupils beginning at six years of age and continuing to fourteen years of age, under the compulsory-school law. There are, also, various types of trade, continuation, and industrial schools articulating with the *Volksschulen* but not under State control, being supported and controlled by various combinations of agricultural associations, trade-unions, employers, and communities, or by the community alone, but enforced by a national, part-time, compulsory-school law up to the age of eighteen years. These higher elementary schools will be considered later.

On the other hand, the secondary-school system is directly controlled by the State, by means of appointed provincial school boards and through very definite regulations as to curricula and time-tables, called the Order of Studies, which

are set up by convocations of secondary-school teachers and administrators. Although there are State inspectors for secondary schools, who occasionally visit the school to see that the Order of Studies and the rules of the provincial board are enforced, yet the responsibility for governing the school is placed squarely upon the faculty, and the local



SECONDARY SCHOOLS OF GERMANY AND THEIR RELATIONSHIP BEFORE THE WORLD WAR

school board has no control over teachers, methods of teaching, or curricula. Secondary education is divided vertically into two separate systems, one for boys and one for girls, for coeducation is still very unusual in secondary education; it is divided horizontally, for boys, into two or three divisions, as illustrated by the accompanying chart.

Thus every German boy whose parents think they can pay the fees required by the secondary-school system enters a *Vorschule* at the age of six years. When one stops to think that graduation from the university is required for appointment to all higher State positions, and graduation from secondary school for all minor State positions as well as for

all executive positions in the commercial world, it becomes evident that the economic status of the parent becomes the determining factor whether the boy of six is destined to be a professional man or a worker with his hands. The constitution of the German Republic abolished the *Vorschule* and substituted for it the *Grundschule*, a school of four years in length, to which every child between the ages of six and ten must go; but as yet the democratic movement in Germany has not gained sufficient momentum to overcome the conservative resistance of the old system, supported as it is by both teachers and patrons. The *Vorschule* is (or was) distinctly a preparatory school for the secondary schools, teaching reading, writing, arithmetic, and such elementary subjects.

Secondary schools for boys. Thus at the age of nine or ten years a choice of a secondary school is forced upon the pupil. Again the economic status of the parent is the determining factor; for if the parents think they can send the boy to the university, he goes to a *Gymnasium*, but if he may stay only six years he is usually sent to a *Realschule*, whenever these two types of school are available. There are, however, several other types of school to which he may go. The *Progymnasium* is a six-year secondary school offering the first six years of the typical classical education, and is usually found only in the smaller communities which are unable to support a nine-year *Gymnasium*. Boys finishing this school and desiring to go on to the university must transfer to a nine-year school for the remaining three years. It may be that the pupil does not relish the severely classical discipline of the true *Gymnasium* type, yet may desire to go on to the university, in which case he would choose a *Realgymnasium*; for graduation from this school will admit to the university, although the pupil is not required to take Greek at all and escapes much of the purely classical emphasis and discipline. If there is no *Realgymnasium* in his community, he may have to go to a *Realprogymnasium* and transfer at the end of six years to a nine-year school. There is still one

other choice. Although the *Realschule* is not considered the best possible preparation for the university, and indeed not more than 5 per cent of its graduates do go on to the university, nevertheless the door of the university is not closed to graduates of this school. By completing the nine-year course of an *Oberrealschule*, or the six-year course of a *Realschule* and three years more in some *Oberrealschule*, it is still possible to enter the university. In the years since the World War there has arisen the *Deutsche Oberschule*, based upon the four-year *Grundschule* but preparing for the university. A study of the diagram on page 65 will help to make these differences clear.

The programs of studies for these three types of school are given in Tables VII, VIII, and IX. The nine-year school does not differ from the six-year school in any respect except that it offers three more years of work, but in actual practice the nine-year school is considered better and usually does have better teachers. In each of these schools all pupils take the same work, so that individual differences are ignored, as far as adjustment of curricula is concerned, although the actual teaching-method is rather more individual in Germany than in America. Even more than one would suspect from the printed program of studies, the linguistic tendencies are emphasized and the humanistic elements slighted. Both mathematics and science are highly theoretical; for applied mathematics or applied science of any sort savors too much of higher elementary education, from which secondary education must be carefully separated at all times. The unification of these four types of secondary school is obtained through the teaching of religion, German, and history, since the direction for teaching these subjects is uniform in the Order of Studies for the various types of school. These subjects are the means through which native culture, nationality, common ideals, and such attitudes as are necessary to bring national unification are taught. All secondary schools charge tuition, usually in the neighborhood of five or six

dollars a month; but the tuition fee is uniform throughout the state, and one *Gymnasium* is ranked as high as another, as far as social status is concerned. Hence, although a strict line of demarcation is maintained between elementary and secondary education, no class lines within the secondary group are encouraged.

Since the upper 10 per cent of the population, measured socially, has no monopoly of the intelligence of the community, the secondary schools are filled with pupils of mediocre intellectual ability who are being prepared to become the leaders of the nation, and this by a system which depends upon severe mental discipline as the agent of education, in spite of the fact that German psychologists startled the world nearly forty years ago by showing that mental discipline is largely a fallacious conception. Thoroughness, hard work, good discipline, superb achievement, an earnest attitude on the part of the pupil, and a scholarly attitude on the part of the teacher have ever characterized German secondary education. Nevertheless its limitations are very apparent: it is a means of perpetuating and enforcing class differences, for in spite of all efforts on the part of the Republicans it still maintains social status rather than intelligence as a criterion for selection; it monopolizes the time of the pupil, so that his contacts with life are very restricted; the curriculum looks backward into the past and makes no attempt to stress function in the present or future life of the pupil, for its content is compiled for the purpose of culture, not for the purpose of use; in its methods it ignores the findings of German psychologists, who have revolutionized German elementary education, and relies upon a semimedieval conception of mental training; in a word, it is distinctly reactionary.

The *Gymnasium* is essentially the school of classical culture and the university preparatory school *par excellence*. Whereas in the earlier times the emphasis was on the acquisition of Latin as a living language, and much stress was put upon the ability to write Latin in a style that imitated the best Roman

prose, in more recent years the emphasis has been upon identifying the pupil with classical culture. Much time in the past was put on the study of Greek, but the present tendency seems to be to make Greek an optional study. This has been due to the trend of students away from the strictly classical schools, and to the recent removal of the university requirement, it now being possible to enter

TABLE VII. PROGRAM OF STUDIES IN THE PRUSSIAN *GYMNASIUM*

	VI	V	IV	UIII	OIII	UII	OII	UI	OI	TOTAL
Religion	3	2	2	2	2	2	2	2	2	19
German	4	3	3	2	2	3	3	3	3	26
Latin	8	8	8	8	8	7	7)	7)	7)	68
Greek				6	6	6	6)	6)	6)	36
French			4	2	2	3	3	3	3	20
History			2	2	2	2	(3	(3	(3	17
Geography	2	2	2	1	1	1	(	(	(	9
Mathematics	4	4	4	3	3	4)	4)	4)	4)	34
Natural science	2	2	2	2	2	2)	2)	2)	2)	18
Writing	2	2								4
Drawing		2	2	2	2					8
Total	25	25	29	30	30	30	30	30	30	259
Gymnastics	3	3	3	3	3	3	3	3	3	27
Singing	2	2	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(18)

the university with two modern foreign languages and no classical language at all. Prestige, carrying with it much economic and social advantage, has always been on the side of the *Gymnasium*, but the contempt that was heaped upon German *Kultur* during the war has had an effect upon the prestige of this chief stronghold of German *Kultur*.

The *Realgymnasium*, always frowned upon by the conservative schoolmen as a hybrid and frequently considered a sort of backdoor entrance to the university, now bids fair to absorb its more classical rival. With the abolition of Greek from the secondary curriculum the chief difference between the two schools has been eliminated, and there seems to be

no reason why these two schools cannot be operated as two divisions of the same school. The *Realgymnasium* does not emphasize Latin to so great an extent as does the true *Gymnasium*, but this, in spite of the opposition of the schoolmen, seems to be the real basis of its growing popularity.

The *Oberrealschule* now enrolls more pupils than any other type of nine-year secondary school. Although the university

TABLE VIII. PROGRAM OF STUDIES IN THE PRUSSIAN *REALGYMNASIUM*

	VI	V	IV	U III	O III	U II	O II	U I	O I	Total
Religion	3	2	2	2	2	2	2	2	2	19
German	4	3	3	3	3	3	3	3	3	28
Latin	8	8	7	5	5	4	4	4	4	49
French			5	4	4	4	4)	4)	4)	29
English				3	3	3	3)	3)	3)	18
History			2	2	2	2	(3	(3	(3	17
Geography	2	2	2	2	2	1	(	(	(	11
Mathematics	4	4	4	5	5	5	5	5	5	42
Natural science	2	2	2	2	2	4	5	5	5	29
Writing	2	2								4
Drawing		2	2	2	2	2	2	2	2	16
Total	25	25	29	30	30	30	31	31	31	262

requirements make it necessary to offer two foreign languages, this part of the curriculum is not stressed, mathematics and science occupying the focus of attention. This school, owing to the great expansion of technical and commercial life during recent years, to the fact that it is the accepted mode of entrance to higher technical education, to the liberal tendencies which have come to the front since the abolition of the empire, and to the growing conviction that Germany's future development depends upon a greater extension of scientific, mathematical, and technical education, seems to be the school which will have the greatest prestige during the next generation. It is, in spite of its emphasis upon science and mathematics, strictly a cultural school. Since the German people still believe that *Kultur* is the objective of secondary educa-

tion, this school with its more modern outlook and greater appeal to modern youth is likely to become the compromise upon which secondary education in Germany will be based.

Secondary schools for girls. Higher education for girls, which has been attempted by the State only since 1908, is centered in the *Lyceum.* This institution takes girls at the

TABLE IX. PROGRAM OF STUDIES IN THE PRUSSIAN *OBERREALSCHULE*

	VI	V	IV	U III	O III	U II	O II	U I	O I	Total
Religion	3	2	2	2	2	2	2	2	2	19
German	5	4	4	3	3	3	4	4	4	34
French	6	6	6	6	6	5)	4)	4)	4)	47
English				5	4	4)	4)	4)	4)	25
History			3	2	2	2	3	3	3	18
Geography	2	2	2	2	2	1	1	1	1	14
Mathematics	5	5	6	6	5	5	5	5	5	47
Natural science	2	2	2	2	4	6	6	6	6	36
Writing	2	2	2							6
Freehand drawing		2	2	2	2	2	2	2	2	16
Total	25	25	29	30	30	30	31	31	31	262

age of six and keeps them for seven or eight grades without differentiation. At the end of the seventh grade those pupils who are going on to the university are segregated in separate courses of six years in length, corresponding, in the program of studies offered, to the *Gymnasium, Realgymnasium,* and *Oberrealschule* of the boys. Those who do not elect these courses are continued in a group, following for three more years a course of study more like that offered by the *Oberschule,* and are then divided on the basis of those who intend to become elementary-school teachers and those who are preparing for domestic life. The former group enter the *Lehrerinnenseminar* and pursue a teacher-training course for three years; the latter group enter the *Frauenschule* and specialize in domestic arts, hygiene and care of children, household bookkeeping, kindergarten work, and so forth.

Intermediate schools. The *Mittelschule*, enrolling in 1925 a little more than 2 per cent of the school population, is an old but neglected type of school. Pupils are received from the fourth or fifth grade, retained until the ninth or tenth grade, and prepared for the higher technical, agricultural, or commercial schools. Thus strong competition on the one hand with the *Realschule* in preparation for the engineering schools, on the other with the higher elementary schools in preparation for technical, commercial, and industrial work, is forced on these schools, so that it seems likely that they will be crowded out of existence in the more populous centers. All the schools previously considered have been State schools with uniform curricula, established and controlled by State authorities. The *Mittelschule*, however, is a local school, supported by the local community, with a curriculum unchanged since 1910, which is but a poor copy of that offered by the State schools. The fees charged are about one half those charged by the State schools, and the cost per pupil is less than one half. Inadequately financed and usually found in rural communities or poorer quarters of cities, these schools offer an education inferior in culture to that offered by the State schools, and inferior in applied art to that offered by the higher elementary schools; yet they still attract pupils because they lack the class stigma that is attached to attendance upon the *Volksschule*.

Trade and industrial schools. Higher technical schools, trade schools, industrial schools, and continuation schools are not considered secondary schools in Germany, but are so considered in the United States. Since the Reformation, Germany has had an eight-year common-school system for the masses, and in modern times complex city and industrial conditions have forced extensions of this system. Its management is in the hands of cities or local districts under supervision of the State, but has always been kept separate from the secondary-school system.

Continuation schools have an attendance that is nearly ten times the enrollment of all secondary schools in Germany.

The compulsory-education law requires attendance upon these schools until the pupil is eighteen years of age. Originally held for from two to four hours on Sunday in elementary-school buildings, in recent years they have come to require from six to ten hours' attendance, either at night or on two half-days, and special buildings with shops attached are coming to be built in the more important cities. Half the time is given to such subjects as civics, religion, German, history, arithmetic, and bookkeeping, and the other half to mechanical drawing or practical subjects. The continuation schools are established and supported by the city, but are under the direction of the Commerce Department of the State. In Munich they are managed by a board composed of the principal of the school, a member of the city council, and three employers. The aim of the school is to teach citizenship rather than vocational skill.

Trade and industrial schools are very numerous and of great variety. In many cases these schools are established conjointly by unions and city governments, each contributing to the support and control. Schools for barbers, butchers, printers, bricklayers, machinists, gardeners, and many other workers will be found, according to the size and needs of the community. Upon graduation from the elementary school the pupil enters on a two-year course composed almost entirely of definite trade training under skilled artisans as teachers, leading to the acquisition of a "union card." Many small schools, each very definitely specialized upon one narrow kind of trade training, afford an efficient vocational training for the pupil, keep in close touch with the industry within the community, and suit the supply of skilled artisans to the demands of the trade. The object of these schools is to turn out journeymen workers, and naturally the control of curriculum and teaching-force is largely in the hands of the trade. These schools have fostered high ideals of craftsmanship, which the apprenticeship system and the pick-up method have failed to achieve, but they have placed the pupil too permanently.

Higher technical schools are not dissimilar to the polytechnic schools in the United States except that they do not attempt to give technical training in general, as the name "polytechnic" implies, but rather are specialized and orientated to some particular industry. They attempt little cultural or theoretical subject matter, making the curricula largely applied and functional.

TABLE X. ENROLLMENT IN GERMAN HIGHER SCHOOLS, 1925

SECONDARY SCHOOLS

	NUMBER OF SCHOOLS	PUPILS	TEACHERS
For Boys			
Gymnasien . . .	515	152,367	10,051
Realgymnasien . .	322	115,615	6,680
Oberrealschulen . .	505	184,007	9,397
For Girls			
Lyceum	823	299,190	14,831
Mittelschulen . . .	1,743	Boys . . 148,554 Girls . . 180,790	Men . . . . . 6,449 Women . . . 6,406
Continuation schools	26,226	Boys . 1,394,199 Girls . . 669,418	Men . . . . 76,816 Women*. . 15,347

*Mostly part time.

Contrasts with the United States. The German boy's program is much more difficult than the American boy's. The German *Gymnasium* pupil goes to school from seven to eleven o'clock in the morning and from two to five in the afternoon; the American boy, from eight to three o'clock, including a period for lunch. The German boy studies six hours a day out of school, and his parents often hire private tutors to coach him in his home study; the American boy seldom studies more than two hours a day at home. The German boy has ten to twelve weeks of vacation against the American boy's sixteen. Periods are sixty minutes long in Germany against forty-five minutes in America. The German boy has for his basic week a thirty-hour program with music, physical education, and often an elective in addition; the

average is perhaps thirty-six hours. The American boy has a twenty-hour basic program with the same additions. The American boy has considerable time to study in school; the German boy has little or none. Most German boys complete their secondary course without ever having had a woman teacher; 55 per cent of the teachers of the American boy in high school are women.

German secondary schools seldom exceed five hundred pupils. The teachers are all graduates of the *Gymnasien*, as well as of the philosophical course in the universities, and since 1892 they have had two years of pedagogical training and one year of practice teaching. They have had more training than the American teacher has had, and carry lighter loads. They teach twenty to twenty-five periods per week with no extra-curricular duties. The principal of the school teaches from eight to twelve periods. The average salary in 1911 was $1500; in 1925, approximately $2200. Women teachers in the girls' schools teach two hours less and receive a correspondingly smaller salary. According to the best state practice in the United States, requirements for a secondary credential in years of study are much the same as Germany's, but the course of study pursued throughout is fully one third less in terms of subject matter covered. In 1925 high-school teachers in the United States taught thirty periods per week for an average salary of $1500.

Local school committees in Germany may purchase a site, erect a building according to State specifications, present the building and site to the State, and thus obtain a secondary school. Expenses are paid by the local committee, and it has general control of all matters pertaining to building and supplies, but all its acts are subject to veto by higher State authority and need confirmation before they become effective. Local school committees have no control over the teacher, who is under the supervision of the district inspector. Time-tables and courses of study are made up at school conferences held periodically at Berlin. These are issued as

Order of Studies and are specific as to time and content, but allow much freedom as to method. The system is less highly centralized than in France, but more so than in the United States. Most American city school systems have one supervisor (head of department or administrator, an office which has little counterpart in secondary education in Germany) for every ten teachers; in Germany the ratio is one to two hundred.

Marks, tests, grades, and promotion, which bulk so large in the American high schools, are unimportant in the German secondary schools. The German pupil has only one examination to pass, — the leaving-examination, — but for this examination he has to acquire much knowledge and show much skill. His whole course of work is headed toward this goal; upon it depend social status, official position, and increased earning power. The artificial prods of the American system are not needed and not used; hence the teacher is more of a teacher and less of an examiner than in America. Naturally, shops are nonexistent in German secondary schools, and laboratories nearly so. The teacher performs such experiments as are performed, the idea being that illustration of the theory of science is the end rather than experimentation by the pupil. German is taught without rules or formal grammar, by precept and use. The departmental system is not followed to a great extent; the classroom teacher has charge of all instruction for his group of pupils, and he goes up through the school with his group. His orders are sharp and short, and he maintains perfect discipline. Permission for absence may be obtained only from the school doctor, and unexcused absences are referred to the police. Secondary schools are not coeducational.

Extra-curricular work is unimportant in Germany, the pupil having no time for such matters. Playgrounds in connection with secondary schools are small, and the pupils play few or no games. They walk in the corridor or garden during the fifteen-minute recess and discuss classroom happenings.

According to army examinations just before the war, 64 per cent of the secondary-school graduates wore glasses against 2 per cent for the elementary-school graduates. The average age at graduation is nineteen and a half years, although nearly one half are over twenty-one; 25 per cent complete the course, and about 40 per cent complete the first six years (corresponding to the end of the junior high school in America).

German secondary schools show very little increased enrollment compared with American schools. In 1902 there were in Germany 464 public and 666 private secondary schools, enrolling 301,887 boys. Nearly half of these were in classes corresponding to our fourth, fifth, and sixth grades, which are not considered secondary in America; one half of the remainder were in junior-high-school grades. The 75,000 *Gymnasium* pupils in grades corresponding to the four years of American secondary education had increased to 100,000 in 1924. The United States, with twice the population of Germany, has twenty times as many pupils in these grades. If America took the highest 10 per cent of her secondary-school pupils, began secondary education two years before the junior-high-school period, lengthened the school period, day, week, and year, eliminated all extra-curricular activities and play, did only college-preparatory, theoretical, classical, or cultural work, she would have a school very similar to the German secondary school. It would remind one of the American high school prior to 1890. Since that time the tendency has been distinctly away from such a school.

World War influences. Perhaps four fifths of the secondary-school teachers in their political views favor an empire, while a like number of the elementary-school teachers favor the republic, and this is indicative of the attitude in the two school systems toward changes in education. The constitution of the republic provided for the abolition of the preparatory school for secondary education, and required that all

German children attend a common school for four years. At the end of the fourth grade a committee composed of the class teacher, a teacher from the secondary school, and a representative of the community was to pick out the best-qualified pupils on the basis of psychological tests, teachers' marks, ability to pay tuition fees, and so forth, and segregate these pupils in State-controlled secondary schools. The preparatory school was to be abolished by 1924, but the time has been extended until 1929 for private *Vorschulen*. In some sections as many as one seventh of the pupils are excused from attendance upon the common school on account of "ill health"; these pupils attend the preparatory schools. Only about 10 per cent of the pupils in the secondary schools have free places, and indeed the German secondary school is still a class school, drawing its pupils from the upper social stratum, the spur of exemption from military service no longer applying.

The constitution provides for no compulsion in religion, but religion is nearly everywhere taught. The constitution likewise provides for motivated instruction, but methodology is little changed in most secondary schools, although under Dr. Paulsen in Hamburg and Berlin instruction has been freed and motivated to an extent surpassing anything seen in America; and indeed elementary instruction everywhere is being liberalized.

The youth movement in Germany is not without significance for secondary education. Starting before the war as a protest against strict supervision by parents and teachers, it has grown since the war to a movement of vast proportions. Groups of boys and girls in their teens, bareheaded and barefooted, dressed much alike in khaki, may be seen at almost any time walking through the country. The movement is a highly idealistic protest against the artificiality of modern life, against commercialized amusement of any kind, against tobacco and alcohol. It takes the form of night wandering, folklore recited by open fires, friendship on a simple basis,

and a yearly pilgrimage to Meissner Mountain in central Germany. It furnishes the German youth with the same sort of social stimulus that American youth derive from extra-curricular activities.

Many changes in the internal administration of schools have been tried in Germany. The Bavarian republican constitution provided that the teachers should choose their principal and make their own rules; pupil representation was also provided for, but more recently the older practice has returned to favor. In Saxony the principalship has been abolished, the staff of the school elects one of its members to act as chairman for three years, and an executive committee of five members of the staff acts as a cabinet; thus, within the limits of the State laws and regulations, the school is self-governed, for no member of the staff may be dropped or a new member added without the consent of the faculty. The national constitution provided that all teachers should rank as State officers and have the privileges attached to the office. All over Germany there has been an increase in the professional participation in the control of the schools.

Other expressions of the popular will. The *Deutsche Oberschule* is a school for German culture solely; and although, like the *Oberrealschule,* it is compelled to offer two foreign languages to fit its graduates for entrance to the university, it does this rather apologetically. German geography, German folklore, German economic, social, and cultural life, are stressed in an effort to build up a unified national life based upon a strictly native culture. Unlike the other types of true secondary schools it is founded directly upon and grows out of the *Grundschule*; being without the traditions of the older schools, it is more modern in both curriculum and methods of teaching. It is opposed on the one hand by the more conservative schoolmen of the older type of school, who fear it will break down the traditional German culture, and on the other hand by the group interested in the *Mittelschule,* who fear its rivalry.

The *Aufbauschule* is a secondary school established usually by the State (there were seventy State and eight local schools in Prussia in 1925) to prepare the more gifted children from the *Volksschule* for the university. This school, which is a product of the German revolt against educational determinism, takes pupils from the rural districts at the end of the seventh grade and prepares them for the university in six years. The pupils are selected upon the basis of intelligence tests, teachers' recommendations, and achievement, and a large number of free places are provided for the poorer children. Thus far the schools have met with great success, and the more liberal element in Germany hope to find through these schools an opportunity to break down the social strata now perpetuated by the older types of secondary school. The curriculum, however, is as yet unregenerated and merely compresses into six years the nine years of traditional secondary subject matter.

People's high schools have been established in many cities since the war. These schools, which are essentially night schools offering cultural education to adults who have previously been denied this privilege, have rapidly increased in attendance; they now have enrolled more students than have the universities. Although the classes are taught by selected professors from the universities and *Gymnasien*, no credit is given for the work; hence the type of student attracted is very different from that found in the traditional schools.

In conclusion it would be fair to say that the older secondary schools have as yet been relatively little changed by the war, but they must progress with the nation or become of lessened importance in the national life. Bismarck said that the schools of Germany won the war in 1870. It is a fair question to ask, Were not the schools of Germany responsible for the psychological situation that caused and lost the recent war for Germany; and were not the secondary schools, which trained all the higher State officers, especially responsible?

SECONDARY SCHOOLS IN ENGLAND

Historical survey. If elementary education is distinguished from secondary on the basis of its being an education in common things for children up to about the twelfth year, whereas secondary schools begin their efforts with children at about the age of twelve and provide an education in more advanced subjects looking to the discovery and development of individuality, then England has had no strictly secondary schools, as distinguished from elementary, until very recent times. Previous to the Reformation there were cathedral schools and monastic schools. These were not, however, differentiated as secondary schools on any of the bases now used to make such a distinction. With a most liberal interpretation of the term, secondary education as such can be considered to have begun in England with the Reformation. It is true that both Winchester and Eton had been established before this time, and to the extent that they were secondary in nature, secondary education had begun in England by the fourteenth or fifteenth century.

Two considerations brought about the establishment of "Grammar Schools" at the time of the English Reformation. One was the demand of the Reformation itself that every individual should have the right and the power to read and to interpret his Bible for himself. Thus there came about a demand for a more general diffusion of knowledge. In the second place, when the monasteries were broken up during the reign of Henry VIII the spoils from them were very great. Friends of education hoped to have a part of this wealth turned toward educational needs. This they were able to do by urging upon king and councilors the wisdom of establishing schools in which the citizens might be taught the ways and means whereby the wiles of Satan (coincident with the Catholic Church, according to them at this time) might be successfully foiled. Demands and opinions thus coinciding occasioned the establishment of Grammar Schools.

At once these sprang into being all over England. Under Henry VIII there were established 63; under Edward VI, 50; under Mary, 19; under Elizabeth, 138; under the first two Stuarts, 142, — a total of over 400 Grammar Schools for English boys within a period of about one hundred and twenty-five years. It must not be supposed, however, that these schools were unaffected by the troublous times which harassed England during the sixteenth and seventeenth centuries. The vicissitudes of Church and of State were reflected in the character of all types of education and not the least by any means in the type of school which was the immediate child of royal sanction.

Not all the Grammar Schools had come about as the result of royal patronage alone. Rather the fashion had been set by royalty, and those who cared to and had the means followed the fashion. By private benefits, personal philanthropy, and the like a more general interest in the higher education of boys had been stimulated. In this way endowments multiplied and increased, or diminished and fell away, as the conditions of the time necessitated.

It was inevitable that this interest in secondary schools for boys, which was stimulated by royalty and fostered by the Established Church, should give vigor and sanction to the type of school represented by Winchester and Eton, which had been established before the Reformation. In point of fact the distinction between the Grammar School and this latter type of school, which has since come to be known as the English Public School, was not made before the latter part of the eighteenth century.

Civil war following the reign of Charles I put a stop to the further establishment of all these schools. Religious strife between the Established Church and the Dissenters resulted in discord and dissension over the management and religious teachings of the schools; at once the attendance began to fall away, interest waned, and one by one they began to disintegrate. Some survived as secondary schools, some were

later incorporated within the Council Schools, a very large number ceased to exist. Of those which survived as secondary schools the most important in their influence upon English secondary education are the ones that have come to be known as the Public Schools. Their persistence over centuries, in the face of varying fortunes; their continued support, both moral and financial, by royalty; their retention of endowments, bequests, and the like, which have greatly increased in value throughout the years; — all have conspired to give these schools a chance (which they have not failed to appropriate) to influence English thought and practice affecting the education of boys.

Rise of the Great Public Schools. Toward the close of the eighteenth century there had come to be a distinction of a sort between Grammar Schools and Public Schools. The latter were such of the early schools for boys as had increased in numbers and prestige, whereas the former were those of the early schools which had lost their prestige and consequently their power of control. From this time on for more than a century the Public Schools were the "type schools" in English secondary education.

With the appointment of the Schools Inquiry Commission in the middle of the nineteenth century a further distinction was made concerning these old schools. This Commission was appointed in 1864 to consider conditions in the Public Schools. It recognized nine schools as the objects of its investigation and reported on seven only, these seven being boarding-schools in distinction from the other two, which were day schools. These seven schools have therefore come to be the standard representatives and type of English secondary school known as the Great Public Schools. They have their imitators, many of which are day schools instead of boarding-schools, some of which are revived Grammar Schools, some of which are adaptations for the education of girls; and there are many other variations. With their variants they make up one class of modern English secondary

schools, and they are the oldest form of secondary education in England. The organization, curriculum, methodology, and internal management of such schools have left a definite stamp upon English secondary schools of all kinds.

The modern Public Schools. These schools have undoubtedly been the most outstanding feature of secondary education in England during the nineteenth century. During this time they have been the object of satire and of ridicule, of fierce complaint and of angry retort, of legal enactment and of commission recommendation, of fiery zeal and of apathetic tenderness, of tireless energy and unstinted devotion. They are, and have long been, an English tradition. They embody in some form or another at some place or another great portions of English characteristics, English customs, English history, English philosophy. All the elements of strength and of weakness which are to be found in the crystallization of any civilization as manifested in its institutions are as a consequence to be found in these schools.

This is merely another way of saying that the Great Public Schools but reflect public opinion and always have done so. During the second quarter of the nineteenth century they were certainly not in good standing. The tradition of fagging had developed into a system of bullying. Mild poaching expeditions had become mere ordinary stealing. Of moral tone there was none, except such as was bad. The claim to high thinking and plain living had degenerated into a system of cramming and of frugality that was at times little short of intellectual and bodily starvation. Public opinion did not tolerate and did not support such an institution. Attendance fell off and the schools fell into disrepute — so much so that Her Majesty's Government ordered an investigation. The Schools Inquiry Commission was appointed, and it reported in 1868.

That this body should have been entirely or solely the instrument by which the abuses and weaknesses of the Public Schools were corrected is not to be expected. Nevertheless

it did at least openly and in a public manner direct and focus the attention of the powers within the schools themselves on conditions which were decidedly not in keeping with the best ideals of English life and English culture. As a result of the agitation which grew out of the report of the Commission the schools reorganized themselves from within. A visit to these schools today reveals little if any of the brutality, the immorality, the misery of life and living, the indifference of masters, the crudity of life and conduct, which called forth the appointment of the Commission in 1864.

Today these institutions are still the instruments of a class. They stand for all for which this social stratum of English society stands. They have a long tradition — at least the seven legally recognized ones have — which they are striving to maintain. The original ones and some of the imitators no doubt are lacking in much that makes for versatility and originality. Fear of bad form has been substituted for fear of the bully, and indifference has taken the place of open hostility to religious life and teaching. Nevertheless they do supply the demand of a group in English life, but a group which is only a small, though disproportionately powerful, fraction of the English nation. The schools which meet this specialized demand of this isolated section of the English people do not, however, represent entirely the English secondary schools or typify secondary education in England today any more than the top hat and spats represent the usual morning costume of the great mass of Englishmen. Both are symbols of a class, and incidentally of about the same class.

Around these schools there still linger, of course, a certain odor of sanctity and a halo of veneration. Temporal and spiritual monarchs have sponsored many of them. Royal and ecclesiastical persons have supported as well as founded them. Martyrs and heroes, statesmen and priests, philosophers, financiers, artists, and men of affairs have all for generations and for centuries come from them. They are

picturesque features of a great civilization. They have quaint and interesting customs. They possess long records and unfathomed legendary history. They are a most fascinating and a tempting diversion in the study of English secondary education.

One form of English secondary school. It must not be understood, however, that the influence of the Public Schools is negligible. Far from it! As the social group which they represent and serve exercises control over much that England thinks and does in political and economic matters, so to a degree do these schools affect English thought and procedure in matters educational. The theory and practice symbolized by the Public Schools have been so typically an organic part of English civilization and have held sway for so many centuries in English education that nothing short of revolution can prevent the influence of such a long-established habit of thought.

If one wishes to be scrupulously exact, even to the point of pedantry perhaps, one must recognize that in the strict sense there are only seven Great Public Schools of England recognized in the Public Schools Act (1868). As these are enumerated they are Charterhouse, Eton, Harrow, Rugby, Shrewsbury, Westminster, Winchester. The Commission ruled that Merchant Taylors' and St. Paul's were "day schools" and so left them to be treated in the Endowed Schools Act (1869). There are today in England, recognized as such by membership in the Head Masters' Conference, one hundred and thirty-three Public Schools, including all those named by the Public Schools Act (1868). Any Englishman, however, will be insistent that there are more than seven Great Public Schools, and equally will he question the number shown by the Head Masters' Conference. There is evidently some subtle basis of distinction which only an Englishman can sense, and which he cannot describe or name. Age, size, patronage, curriculum, method of support, methodology, type of pupil, internal organization, — all are factors

which enter into the distinction and serve as earmarks, but in such varying degrees and with such a variety of emphasis that only those "to the manner born" are able to perceive that a school is, or is not, a Public School. Starting with the group considered by the Commission, it may be confidently stated that all the others in the Head Masters' Conference have been modeled to a greater or less degree on the features which characterize this original group.

What are those external features and characteristics which combine to give a school the earmarks by which it can be recognized as in form a Public School? The answer is to be found in a consideration of the features which these schools possess to a greater or less degree in common. An Etonian or a Wykehamist would doubtless detect a "vague indefinable somewhat" in school or scholar which would mark it or him indubitably. Anyone not possessing this sixth sense of an "old Public School boy" must resort to a consideration of the external manifestations of the Public School spirit.

This type of school was usually founded in the first instance by some individual or group of individuals to serve as a place where aristocrats too poor to educate their sons might send them for an education which would be of a nature and of an extent suited to their social class. A sum of money, certain lands, various sources of income, were put in trust. The income of this was to be used to provide a free education for these sons of poor aristocrats, boys who were known as scholars or foundationers. It was ordinarily further provided that the "master" in charge of the foundationers might also receive into the school other boys who could afford to pay in the coin of the realm for such instruction as the school had to offer. Such pupils were designated commoners, oppidans, and the like. It is readily seen that such a privilege could be abused, and as a matter of fact was abused. In time of financial distress the commoners were welcomed and the way of the foundationer was made hard until the former often occupied the attention and

interests of the masters to the detriment and exclusion of the latter. This was brought about by making severely competitive the examination for admission as a foundationer, while admission as an oppidan was more perfunctory. It has now become a firmly fixed idea that so long as a lad can pay for instruction no one shall deny it to him. If a lad cannot pay, then he must prove by special test that he is able to profit by the instruction he seeks. Such is the ultimate result of this distinction between scholar and commoner.

All the Endowed, or Foundation, schools have passed through periods of success and growth as well as of failure and decline. Many of them have had royal patrons (some in fact have been refounded and others have been founded outright by an English queen or king); a number of them which owe their existence to ecclesiastical benevolence have seen their holdings swept away to be restored in whole or in part by various laws and decrees; some have suffered the devastation of wars and have later prospered, whereas others have never recovered their former place as the mother of men for the nation's welfare. This has given them a peculiar national character, earmarked, as it were, by royalty.

Internal features of the Public Schools. The forms of internal organization made for the several Public Schools or adopted by them have interesting similarities, with minor differences of title or limits of authority. The ultimate control of the business side of the institution is vested in a group of managers headed by an executive often designated warden or provost. The other members of this group are generally known as fellows, and more often than not they are ex-foundationers. This body is usually self-perpetuating. In charge of the affairs more intellectual or educational in nature is the head master. He selects and appoints as well as discharges the assistant masters, determines policies, attends to discipline, and is on the whole responsible for the conduct and management of the school. There are also tutors, or ushers, who directly aid the pupils in the preparation of

their work, direct their further reading and study, and have more direct and immediate contact with them. The school itself is usually divided into an Upper School and a Lower School, and each of these into forms or grades; these forms in turn are divided into smaller units known as removes. Ordinarily a remove is accomplished every half-year and a form every year, though this is by no means certain or uniform. Boys are generally not admitted to the Lower School earlier than the age of eleven or to any portion of the school after they are fourteen. Promotion is secured on the results of rigid examinations in conjunction with the results of daily work. The custom of promotion by seniority has virtually disappeared. A great deal of the work is memoriter in nature, though by no means exclusively so.

The Public Schools consider it their first duty to prepare their pupils to advance into university study or to stand examinations that will place them in government positions of rank: army or navy, diplomatic service, and so on. Hence the social as well as the intellectual activities of the pupils are decidedly a means by which to attain the goal. Inevitably the aim determines the subject matter of instruction, and there is still ample opportunity provided for the study of Greek as well as Latin and for thorough training in mathematics. Science and "modern sides" are not utterly neglected, but are rather tolerated than sponsored. Changes in curricula or in textbooks come about only very slowly, and changed methodology has been rather an imposition from without than a growth from within.

Great store is set by the disciplinary system, an inheritance from the days of Thomas Arnold. Every effort is made to develop within the youth attending these schools a moral fiber and sinew which will make him an independent, self-controlled, thoroughly dependable and upright Englishman. The goal is development of correct habits and not merely good manners. To this end the fagging system in modified form is defended as a means by which to teach habits of

obedience and respect for superiors in authority, and as a first lesson in the acquisition of the ability to lead and command. The prefect system is the pride of the schools as a disciplinary device, the means by which the policy and ideals of the head master are passed on to the younger pupils through the authority of the sixth-form or other upper-form pupils. The system of school organization into "houses" for athletic, social, and club purposes is so highly respected that the State schools in many instances purposely attempt to imitate it in so far as day-school conditions make it possible. At every turn the Public School boy finds himself challenged to stand by the results of his judgment. If he only partly learns the lesson, he becomes a prig and for it is properly scorned, if not derided, or at least spurned. Some of the youth never do acquire the habits, but take on a mere surface of good manners. They are the despair of the disciplinary measures in the Public Schools — they probably would be the despair of any system of education.

The distinction made by the Schools Inquiry Commission appears still to obtain: namely, that the Public Schools are in the main boarding-schools and not day schools — by which is meant that the pupils live at the school twenty-four hours a day during term time. The objectives that are set could not possibly be realized, so the leaders assert, if the pupils were not in constant attendance. At any rate it has become an accepted idea, which has a certain legal sanction, that the boarding feature is a watermark of the Public School. The assistant masters are usually put in charge of the houses and are held responsible for the spirit which pervades them. The number of boys in a single house varies, but fifty boys to a house is not uncommon; for example, at Harrow there are seventy boys in the head master's house and an average of forty-five boys in each of the other houses.

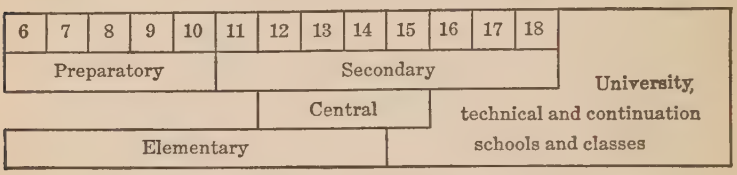
It hardly needs to be stated that fees are charged in these schools. A certain number of free places are provided for foundationers by the terms of the trust. Such of the schools

as desire and seek a place on the Grant List — that is, wish to receive funds from Parliament — must provide a certain proportion of their places free of charges. There is great variety in the amount and type of these fees; tuition fees vary from £20 to £100 ($100 to $500); board ranges from £70 to £125 ($350 to $625); additional fees may be and usually are charged for various extras, such as music, mechanics, and laboratory. An annual inclusive charge of £150 ($750) would not be unusual. In many of the more exclusive schools the annual cost will run to nearly twice this sum.

There are many who decry the English Public Schools and are ever ready to proclaim their weaknesses. It is not to be doubted that weaknesses exist and have existed through long years. It is interesting to note, however, that many of these very weaknesses have given direction and force to the modern movement for secondary education in England. If the Public Schools long neglected science and modern sides, their neglect forced public action in regard to these parts of secondary education. If they still scorn to introduce practical and vocational elements into their programs of studies, the demand from great sections of the English people is compelling official recognition of such training as a bulwark for a modern democracy. At every turn where their weaknesses stand revealed a benefit and an impetus have accrued to England as she has been trying to find the way out to a truly national system of education. The truth of the matter is that England has become convinced that her people need more than one kind of continued instruction, that variety of demand calls for a variety of supply, and she has very wisely not attempted to destroy the old and build new, but has been willing to allow what seems to be everlasting and eternal, bedrock, in the old to remain and has added thereto. Time and experience of the future as well as of the past will test out the verity of all things, and what has proved to be only shale or sand — or worse — must be replaced with

more enduring material. The Public Schools have met some of the educational needs of England and continue to meet them. They do not meet all the needs and demands of this modern civilization. Recent plans are attempting to face this fact, which has at last been realized.

Officially recognized secondary schools. There is no legal definition of a secondary school or of secondary education in England. The schools which are recognized officially as "secondary schools" are those which are included in the so-called



ORGANIZATION OF ENGLISH SCHOOLS

"Efficient List." This designation "Schools on the Efficient List" refers to those schools an adequate proportion of whose pupils remain at least four years at school, the school life of whose pupils normally extends to the age of sixteen years, and whose instruction and premises, having been inspected by officials of the Board of Education known as His Majesty's Inspectors, are by them regarded as efficient and adequate. In its regulations the Board rules that for a school to be recognized as a secondary school it "must offer to each of its pupils a progressive course of general education . . . of a kind and amount suitable for pupils of an age-range at least as wide as from 12 to 17." In the estimation of officials these secondary schools are the most important and the most hopeful of all the types of institutions which offer advantages of higher education. In fact, when an Englishman talks about secondary education he means these schools; he does not mean technical or art or any other type of institution. He claims that secondary education "deals with ideas rather than things," and insists that education dealing with "things"

is not secondary at all. Not every school in England, however, which could qualify under this regulation or popular interpretation is to be found recorded on the Efficient List. For example, several of the Great Public Schools do not appear on this list, and certainly they can all qualify under either interpretation. Schools which do appear in the official classification of Secondary Schools on the Efficient List are grouped under four different headings; namely, Council Schools, Roman Catholic Schools, Foundation and Other Schools, Welsh Intermediate Schools. The same classification is used for the schools on the Grant List. These four classes of schools would seem to represent, therefore, such schools as are officially recognized as giving secondary education. Technical schools, art schools, vocational schools, and the like, whether full-time or part-time, are not recognized as constituting any part of secondary education in England. The English secondary school is one which provides training in the cultural as distinguished from the applied arts. Secondary-school pupils look forward to the chance for further study in the cultural arts as offered through the examinations which will admit to higher institutions. Not all such pupils will go on, of course; but the education they receive in these schools is planned to lead them toward preparation for the privilege of university education, and that means education in ideas rather than in things.

Council Schools. The Council Schools are all those secondary schools which are organized or established or maintained or supported or, as is commonly stated, "provided" singly or jointly by local education authorities; that is, education committees of County Councils, County Borough Councils, and so on. Also when any endowed school or any school subject to educational trust and the like has been taken over by any local education authority and the government and finance of such school have been assumed by this local education authority, the school is officially known as a Council School. This latter condition has, perhaps, been brought

about through a depreciation for one cause or another in the value of the endowment or trust of a school which had been providing secondary school advantages, on a fee basis, in a given government area. The managers of the school, no longer able to continue it as a first rate school, have reached an agreement with the local education authority whereby the school is "provided" by the latter, in which case it becomes in reality a State school. In some cases also there is joint control by the local authority and the managers of the school.

For the school year 1922–1923 there were 617 Council Schools on the Grant List, with an enrollment of 177,945 pupils. Of this number of schools 524 were provided — that is, established, maintained, and controlled — by a single education authority, 14 were provided by joint authority, and 79 were endowed schools which had been entirely taken over by some form of local education authority (Council) and by it were governed and supported.

All these schools are officially known as the schools for which local authorities are responsible. These are, in other words, the State secondary schools. All except 37 of them charge fees, although in 599 of the 617 schools 25 per cent. of the places available are by law made free; that is, scholarships are available to such pupils as successfully pass the (scholarship) examination. Of the remaining 18 schools the percentage of free places varies from 10 to 20. The philosophy of English secondary education at this point is to the effect that any pupil not able to pay for education for himself or herself beyond the rudiments must demonstrate a type of ability which can profit by the sort of education offered in these schools; namely, general and cultural rather than specific and applied or practical. These fees vary from not over 1 guinea (about $5) to over 20 guineas (a little over $100), the central tendency being between 9 and 10 guineas, or about $50 per pupil per year. Only 103 of the 617 Council Schools charged a fee of more than 12 guineas (about $62)

in the year 1922-1923. Of these 617 Council Schools 159 were reported as for boys only, 246 were for girls only, and 212 were for boys and girls. These Council Schools are predominantly day schools, 548 being for day pupils only and 69 being for day pupils and boarders only.

Roman Catholic Schools. Of the secondary schools classified as Roman Catholic Schools there were 67 in 1922–1923 reported on the Grant List as providing this type of education to 17,782 pupils; all of them were under the control of the Roman Catholic Church and not of local authorities. They received government grants by virtue of the fact that they had complied with all the regulations of the Board concerning grants. Of the 67 schools 14 were for boys only, and 53 were for girls only, strictly non-coeducational. They are about equally divided in number on the matter of catering to day pupils only or to both day pupils and boarders. In the former category there are 36 and in the latter 31 schools; none is a school for boarders only. All charge fees, but in 57 of them free places obtain to at least 25 per cent of the vacancies. These fees vary from between 3 and 4 guineas to 20 guineas, the clear-cut central tendency being a charge of between 8 and 9 guineas, roughly between $40 and $50 per pupil per year. There are doubtless many other such schools under the control of the Roman Catholic Church which are not officially recognized. Only those which are classed as efficient by the Board and receive grants are reported, and there is no official knowledge concerning the others.

Foundation and Other Schools. The third classification, Foundation and Other Schools, presents the greatest variety of forms. Under this head are included such of the Great Public Schools, the old Grammar Schools, the private-venture schools, the schools in the Head Masters' Conference, the old endowed schools, the schools conducted by the Girls' Public Day School Trust, and any other form of school which cannot be classified as belonging to one of the previous groups, as

have sought and received approval by the Board as an efficient secondary school and eligible to receive grants. These various types of endowed school taken together constitute the largest group of efficient, grant-receiving secondary schools, next to the group of schools for which local education authorities are responsible; that is, Council Schools. In 1922–1923 there were 479 of these schools with an enrollment of 135,648 pupils. Many of this type of school — the exact number does not appear in official reports — are on the Efficient List but not on the Grant List, some through lack of desire, some through lack of necessity. There are 271 of them organized for boys only, 137 for girls only, and 71 for both boys and girls. In 353 of them one fourth of the places are free; there is a group of about 100 in which only approximately one eighth of the places are free; in 3 schools no fees are charged. For such pupils as pay fees the charges range from between 4 and 5 guineas ($22.50) per year to over 20 guineas (about $105). The average charge is approximately 10 to 12 guineas (roughly $60). Of these schools 240 are for day pupils only, 3 are for boarders only, and 236 for both day pupils and boarders.

One interesting feature about this group of schools is the fact that no one knows how many schools there are in England — good, bad, and indifferent — which would be classed as belonging to this type. It is certain there are many good Foundation Schools — that is, schools of this type doing high-grade work — which are not found on the Efficient List of the Board. It is likewise certain that there are schools which, if they were classified at all by the Board, would fall into this category, but which are not doing high-grade work and are not on the Efficient List of the Board. It is impossible to secure an estimate, or even a guess, as to the total number of such schools.

It is within this group of Foundation and Other Schools that the Great Public Schools would be placed if they sought official recognition. Here also are placed such imitators of

the Great Public Schools — those which class themselves as Public Schools — as seek official approval. The present relative importance, numerically speaking, of these Public Schools may be shown by the fact that, counting the original seven, the Head Masters' Conference recognizes 133 Public Schools. There are 617 Council Schools and 67 Roman Catholic Schools officially recognized on the Grant List. The Public Schools do not appear to have even numerical equality with other recognized secondary schools. Take them within their own group, — the Foundation and Other Schools, — of which 479 are recognized officially, and if all the recognized Public Schools were included in this total (and they are not), the Public Schools would make up less than one third of the entire number of recognized Foundation Schools. As a matter of fact the Public Schools are little more than a patch — numerically speaking — upon the English secondary-school fabric. The Public Schools are no longer the typical secondary schools of the nation. They have left their stamp upon much of the organization and management of the other schools, but they are not today either the dominating or the interesting feature of English secondary education they once were.

Here also are classed those specialized institutions for the higher education of girls conducted by the Girls' Public Day School Trust. These are for English girls what the Public Schools are for English boys. They do not have the tradition, the history, and the resultant prestige which many of the Public Schools have. They are, however, an excellent type of secondary school devoted exclusively to the provision of advanced educational privilege for girls. It is also in this group of Foundation Schools that all the girls' efficient secondary schools existing by endowments, gifts, and the like are found. Provision of educational privilege for girls came slowly in England, but the present trend is toward rapid and substantial expansion of the provisions. As shown by data presented for the other groups of secondary schools,

there are not many coeducational secondary schools in England. Nevertheless, as reference to the data will show, there is provision of educational privilege for girls in all types of secondary schools.

As has been evident, these three types of schools which are officially recognized as secondary schools all charge fees. One of the conditions, however, governing inclusion on the Grant List is that a certain proportion of all vacancies in such schools must be kept free for "junior scholars." The present law makes it compulsory that schools shall provide at least 25 per cent of such vacancies as "free places." As a matter of fact, since the free-place scholars usually remain more consistently in a school than the fee-payers, and since 25 per cent of all new entrants are free-placers, the result in the greater number of these schools is a school population with from 40 to 50 per cent of scholarship pupils. A slightly different but similar arrangement exists when the local education authorities coöperate with an endowed or parochial school to provide secondary-school privilege for the area.

It is the control of these free places which gives the authorities the chance to provide free secondary-school advantages. Annual examinations under the jurisdiction of the Board of Education are given in all elementary schools to all children eleven years of age. From the results of this examination a list of boys and a list of girls who have been successful are compiled and arranged in the order of the marks made by these children. Beginning at the top of the lists, pupils are drawn in descending order to fill such free places as are reserved by the different schools. Such pupils are designated junior scholars and pay no fees. In cases of necessity, maintenance allowances are also granted, administered under certain restrictions. There are always many more scholars eligible than there are free places available. The scholarship system is not as simple and straightforward as this would make it appear, but these are the main features affecting the secondary schools. It is, of course, an adapta-

tion of the foundationer, scholar, idea of the old Grammar Schools, endowed schools, and the like. These "scholars" are "foundationers" of the State.

Summary Comment. Such are the schools which are known in official England as providing secondary education. It is evident that England is not offering free and full opportunity for an education beyond the rudiments. While there is a strong sentiment which favors greater liberality in the extension of secondary-school privilege, there is an inherent difficulty in the way. Education in England is conceived as a privilege and not as a right of the children. The State has a right to compel children to attend school to an age it may fix, but the child has no right to demand that the State shall make it easy as well as possible for him to stay in school just as long as he can profit by it, whether that profit shall be by means of a cultural or of a vocational type of education. For those who can profit by the cultural type of secondary education opportunity is provided for them to prove they can so profit. For those who might profit by the practical and applied type of secondary education limited opportunity to prove ability so to profit is provided by the State.

As hinted previously, the subjects offered and taught in these schools are those for which cultural and disciplinary values are claimed. The programs of studies are not fixed by the State, but the subjects treated, the methodology used, and the topics stressed are determined consciously or unconsciously, willingly or unwillingly, by various examination boards. Since these boards are largely collegiate in nature, the type of questions is very likely to take on an overtone of the academic. At any rate the masters and mistresses feel very keenly that the success of their work is determined, and probably ought to be, in terms of the success their pupils have in passing matriculation examinations. It is inevitable, therefore, that the criteria for work within these schools should be such as prevail among the leisure class, or the ruling class, or the upper strata, of English society; that is,

the standards for English secondary schools are set by a class and for a class. To obtain the privilege of secondary education one must conform to the standards set by that class. Any other kind of education which does not conform to such criteria and standards is not secondary education. The scholarship tendency, the free-place system, the maintenance-allowance provision, and several other features are opening up educational privilege, but the full, free, and equal opportunity is still far from realization.

The Central Schools. Among the great variety of institutions for purposes of education in England today there is one which is very frankly on trial. It is still too soon to judge whether it is a novelty, an innovation, or a contribution. In its present condition it appears to be a sort of cross between a concession to the old English interpretation of the aristocracy of learning and an endeavor to apply the modern psychology of individual differences to school organization. It is fluid, unstable, irregular, but purposeful, vigorous, interesting. Whether it is evanescent and only a passing show cannot now be judged. Its present success may be due to the spirit of the crusaders who are the teachers in it, or it may be that necessity has produced a new species which will grow and multiply through the sheer force of its universal and eternal principle. At the moment it commands attention and merits consideration.

The Central Schools have legal status as elementary schools and are administered as such. Nevertheless much of the subject matter of instruction partakes of the nature of secondary education; the age at which pupils enter them is the beginning of what has been known as the adolescent period; their internal organization tends toward the departmental rather than the grade-teacher type; they are frankly a school unit for the training of intellectual capacity above the ordinary; the spirit which pervades them is one of the discovery and development of individual tendency. All these are earmarks belonging to the secondary rather than to the elementary

stage in the educative process. In the legal and Parliamentary circles which control education in England at the present time, however, education is not conceived as a continuous process developing through several interrelated stages, but is considered as a commodity of varying grades, such grades corresponding rather closely to the strata which make up English society. For this reason the Central Schools are classed as elementary, since they are purposed to serve the working and trade classes rather than the professions. From the more generally accepted point of view, however, the Central Schools must be considered secondary.

They aim to provide an advanced general education with a distinct vocational bias in order that the pupils on leaving may have developed a sense of good citizenship, have acquired certain tastes and habits which shall make their leisure time periods of re-creation, have thoroughly mastered fundamental skills in knowledge, and, finally, have learned a minimum about some trade or art by which to earn an honest living and serve as a foundation for advancement as they develop further skill and knowledge. For the girls in particular great pains are taken to develop in them, as a feature of good citizenship, a pride in home, — home-making as well as housekeeping. For both boys and girls, play, sports, games, enter as a feature in the development of character and in the practice of a worthy use of leisure time. The emphasis is probably on the leisure-time and vocational objective, though it must not be supposed that the others are sublimated or neglected, — very much to the contrary. There is conscious and definite purpose in all that is done.

Pupils are admitted to these schools at eleven years of age, selected in order from the lists of those who did not gain free places in the officially recognized secondary schools because the quota of such free places was filled. A second chance for admission comes at thirteen years of age, exactly as for admission to the free places in the official secondary schools. That is, the recognized secondary schools get the first choice

of those who successfully pass the examination, — as proof of ability to profit by higher education, — to the limit of their free places. From this point on down in the lists the pupils are admitted to Central Schools so long as there is any room in such schools. Pupil records and teacher judgments from elementary schools are a check on examination marks.

Since these are by law elementary schools, no fees are charged and the pupils can remain in them until the end of their fifteenth year. In theory the curriculum is three years in length, and it actually often provides education over an extension of this period of time. In nature the work has a distinctly vocational "bias," the exact character of it being influenced by the demands of the parents, the industrial character of the neighborhood, and the abilities, interests, tendencies, of the pupils. During the first part of the pupils' career in these schools the emphasis is placed upon providing for them a general education, this emphasis gradually changing to more specialized prevocational and vocational topics and subjects. This general education includes such subjects as science, algebra, modern language, as well as the advanced work in the rudiments. Household arts and manual arts provide the point of departure for the specialization of the later years; that is, sewing may develop into preparation for the garment trades, or sheet-metal work may prove introductory to the trade of plumber, and so on. There are no uniform curricula or courses for these schools even within the same area, each school being very largely a law unto itself.

These are not schools preparatory for entrance to an institution of still higher education, like the Council Schools and others of similar kind, but are conceived rather as preparatory to entrance into civic life and industry. In some cases pupils have been chosen by masters or mistresses to go on for higher education, but this usually comes by the time the pupils are thirteen or fourteen years of age and before they have completed the Central School program. Some of the

pupils in these schools do follow up their practical interests through attendance upon technical or art schools, which they enter by means of competitive examinations for scholarships. Central Schools, however, are not in any sense considered preparatory to these higher schools of specialization.

In size these schools tend to average from 400 to 500 pupils. If it is possible in any given area to have a school of 700 to 800 about equally divided as to boys and girls, the tendency is to organize one school for boys and another for girls. In areas where a total enrollment of only about 500 can be expected, a mixed school will be established. Because of the differences in vocational tastes and aptitudes between girls and boys it is considered highly desirable to keep the sexes segregated. This is a reason, of course, over and above the English tradition against coeducation.

Much time and attention are devoted to the development of character and citizenship traits as well as to a discovery of particular vocational aptitudes. Since the schools are kept to small numbers, this is made possible through the characteristic attitude of schoolmasters and school mistresses in regard to their personal influence upon their pupils and responsibility for them. Mechanical aids by which to carry on such work are lacking, but the personal equation appears to function well as a substitute.

There is a tendency to develop these schools into institutions of greater length and even broader curricula. Whether this tendency will develop into reality is at present a very unsettled question. By law, they are free elementary schools; in spirit, and to a large extent in form, they are free secondary schools. They may prove in time to be the entering wedge for free secondary education in England. They would appear to be an effort to develop a national system of education from the top to the bottom in recognition of the educative process as continuous. As at present organized and conducted they overemphasize the needs of the working class, and they tend to bring the scholastic career of their pupils to an abrupt end.

They help to provide continuous but not unlimited opportunity for free education. They are an interesting expression of English educational thought.

The Technical Schools. England has also a group of institutions varying widely in character, which may be classed for convenience as Technical Schools. They appear in official documents under several headings, such as Junior Technical, Part-Time Technical, Evening, Day Technical, Art, and other schools or classes. The distinctions between these various types of institution are too subtle and involved for brief treatment. Certain sweeping generalizations concerning their form and organization, which give them earmarks of secondary schools, can be made.

They had their origin in evening classes and part-time schools for workers in the industries. A practical danger to the position of England in the industrial world focused the attention of local school authorities upon the necessity for workers trained in the technical features of manufacturing and trade activities. The success of such classes and schools wherever organized, coupled with the growing sentiment for extended and prolonged educational advantages for greater portions of the young people, brought about the organization of several types of schools devoted to the training and instruction of young persons in things as well as in ideas.

When the regulations governing such schools are examined, and when the organization and management of them are looked into, it is not difficult to find many of them which take on the character of secondary education, — as generally understood. Indeed, some of them carry on a section of their work so organized as to curricula, purposes, and so forth as to receive official sanction as a secondary school, in so far as this feature of their work is concerned. It is the day schools of the technical type, and more particularly those giving full-time instruction, which manifest the clearest secondary-school tendencies.

Such schools presuppose a successful period of elementary schooling. In addition to the specialized subjects of study

they demand of their students a balance of subjects which will provide a general education; for example, English, history, geography, and so on. Some of their students are prepared to take and do take, as well as pass successfully, the matriculation examinations set by the various examining boards officially recognized by the education authorities. They prepare students also to pass examinations set by boards nationally recognized by various industrial and trade bodies. Grants from the Board of Education are received by such of them as comply with the prescribed regulations, one condition in which is of course official inspection. Fees are charged, but free places are provided as required by law; and many of these schools have endowments or bequests and the like which make it possible for them to remit or return fees in special cases. Some of them also have funds by which scholarships are provided to students in them who go on to more advanced work in the universities.

The student body of the junior technical high schools is drawn from such eleven-year-old children in the junior-county-examination lists as prefer this education in things rather than in ideas. This group comes largely from the free elementary schools. The private and parochial elementary schools provide another group who enter anywhere between eleven and fourteen years of age and pay fees, or profit from the internal scholarship privileges. The work in these junior technical schools is preparatory to entrance either into industry or trade immediately or into the technical institutes. Part-time word and evening work are also provided in such schools to meet the needs of special cases, which are numerous. The technical schools and the others of this type providing post-elementary-school privilege draw their students from the junior technicals, from fourteen-year-old children in the free elementary schools, from private schools of various types, and from trade and industrial employees who seek advanced training in the skills of their particular activity. No students are admitted to this type of

technical school under fourteen years of age, and many of them are mature men and women. Fees are charged which are not high, and scholarships are available. The major concern of such schools is therefore to improve skills already begun and to extend the worker's knowledge about his own vocation. Part-time instruction and evening instruction naturally constitute an important phase of work in these advanced schools.

All these technical institutions are schools for a class, — the working class. They came about in the first instance as a protection to the nation's industrial life, and they have developed into additional means by which the educational privilege has been extended. They tend to perpetuate class consciousness and class distinction, and this is what the Englishman desires, — even the English workman. They also tend to perpetuate class privilege, because they accentuate class lines; and this the English workman decidedly does not desire, but vigorously desires to abolish. It is difficult to see how these contradictions in desire can be reconciled, and it is these very contradictions which add complexities to the intricacies of secondary education in England.

General summary. It would seem that class need is an important factor in the development of English secondary schools. Likewise, it appears that the interests of the State predominate over individual interests, although the latter are guiding factors as means to the desired end. There is a tendency to extend educational opportunity as a privilege, and no recognition of it as a right. Increasingly the direction which secondary education shall take is being determined by local authorities, a movement decidedly away from centralized control. The Public Schools no longer occupy the commanding position they once did as the providers of secondary education. Huxley's conception of education as a continuous process is gaining ground both in theory and in practice, even if not completely realized. Secondary education is making

its way in keeping with English life and customs. As the demands of life force the issue, the changes come about; and so long as a tradition or a custom serves a need it is retained even in the midst of change. The entire procedure may be illogical and unsystematic, but it is England's way.

SECONDARY SCHOOLS IN THE UNITED STATES

The early period. *The type-school.* Perhaps the best way in which to get at the meaning of secondary education in the United States is to sketch hastily the development of the secondary-school movement from colonial times to the present. This institution, like others in the United States, has grown up to meet a recognized need as circumstances have developed rather than come about as the objective realization of some preconceived plan.

We first hear of a school of the secondary type in the Virginia colony about 1620 or 1621, when the Virginia Company of London proposed to establish such an institution as preparatory to "the colledge" which afterwards became William and Mary College, and actually began to collect funds with which to put it into operation. In 1622, however, came an Indian massacre, and the project was abandoned. This is known as the "East Indy School."

The next appearance of a secondary school is in the Massachusetts Bay Colony when the Boston Latin Grammar School was established in 1635 by vote of the townspeople, and Philemon Pormont was requested to become the first master. It is probable but not certain that the school was actually established in this year; but for the following year, 1636, there is record of a meeting at which a subscription was taken up for the support of Mr. Maud as schoolmaster. In 1641 the income derived by the town of Boston from the rental of Deer Island as a pasture was devoted to the support of the school. This last fact is important to note, because the idea of public support for an institution of this character

was a highly distinctive and important feature of it. In general, the idea was an inherited English one, — namely, the idea of the Grammar School, so long the feature of English secondary education, — but its public support and public control were distinctively outgrowths of the same spirit that actuated emigration to the new country. The single aim of the Boston school was to prepare young men for college, and that meant starting them on the road to the ministry. Its curriculum, like that of its English prototype, was made up almost entirely of Latin and Greek. It is to be noted at this point that these subjects were, at this time and in this school and others of its kind, definitely vocational subjects. The ministers needed them in order to perform their tasks. Discipline was severe, tasks were hard, masters were vigorous and rigid. Its most famous master was perhaps Ezekiel Cheever, who served the school successfully and characteristically over a long period of years, leaving a distinct stamp of his personality and his intellectual vigor upon the school, and through his Latin *Accidence* determining the course of preparatory Latin for many years. The Boston Latin Grammar School was the model, the pacesetter, and the standard-bearer of early secondary schools in the United States.

This idea of a school for the group of young men who were preparing to enter the ministry spread to several other of the towns in Massachusetts, and within ten years a strong sentiment in favor of such schools had grown up in the Massachusetts Bay Colony, which found expression in the Massachusetts Ordinance of 1647, — the Magna Charta of education in the United States. Because this document contains the fundamental ideals around which the American system of education has grown up and because its provisions express much of the educational spirit of the times, it merits consideration.

It is well known that for many years after its founding the Massachusetts Bay Colony was a theocracy. So long as the

settlers were all of one faith, such a form of government was able to exercise control with satisfaction to the governed. This was the situation in Massachusetts, so far as the schools were concerned, for two decades. The Church not only fostered the schools, it administered them, managed them, supervised them, taught them; that is, controlled the entire educational policy and program. Soon there began to come into the colony settlers who were unwilling to agree to the doctrines taught by the original settlers and propagated through the Church-controlled schools. Rather than have their children contaminated (?) by these teachings they kept them from the schools, even at the risk that the children might grow up in ignorance and illiteracy. The governing authority (the Church) had to take cognizance of this neglect of parents. The difficulty in the situation was that the Church as such had no authority to compel these recalcitrants to place and keep their children in these schools. The Church leaders thought they saw a way through the agency of the legislative body and, being in the majority in that body, felt they had little to fear by an appeal to it to enact laws by which establishment of schools and attendance upon them could be enforced. So the appeal was made, and the General Court of Massachusetts—a civil body—passed the Massachusetts Ordinance of 1647, or what is sometimes called the Old Deluder Law.

Public-school policy established. By this act the foundation was laid for the development of the American public-school policy; namely, that the control and support of education is the function of civil institutions, that is, the government. The wording of this ordinance is such that the intention of the makers is clearly that secondary schools are to be considered an organic part of the public-school system; that they are to be, therefore, supported and controlled as other public-service institutions, that is, by public funds and public authority; and, in the third place, that provision of educational opportunity is a duty of government areas to

be enforced by penalty-provision for failure to provide such opportunity. The document clearly foreshadows the conception that education is a State function, that it must be universal, free, and compulsory.

With these clear-cut legal provisions as foundation stones the friends of education began to expand the range of the Latin grammar school, and it became the typical secondary school of the Northern colonies. By 1700 it is certain that some thirty such schools were in existence, and developing educational opportunity. In many respects these schools were similar. They all placed emphasis upon the classics; those located near to higher institutions tended to prepare students for entrance to them and thus to the ministry; those removed from such institutions tended to prepare students directly for service as leaders in government; the buildings in which "school kept" were ill adapted to school purposes, and of equipment there was little or none; textbooks were scarce and poor. The schoolmasters of colonial days were literally good, bad, and indifferent. Some, like Cheever, were ideal leaders of boys and makers of men; some were positively vicious, if not actually criminal; some taught school while they were awaiting a call to a parish or until they could find something else to do. The last two classes of masters occasioned a large turnover in the teaching force of colonial secondary schools. But while there were many respects in which they were alike in general, there were minor differences in organization, in length of day, or in type of curriculum, and so on. These differences were probably due to the efforts made by the education authorities to adapt an Old World conception and form of education to a New World situation. As to their efficiency in attaining their professed aims, statistics of the time show that a very small proportion of the boys attending these schools ever went on to college. The wonder is not, therefore, that the Latin grammar school did not survive, but rather that it existed as long and as successfully as it did.

Decline and fall. Early in the eighteenth century a general apathy toward education of all sorts grew up in the colonies, and a decreasing amount of attention began to be paid to the Latin schools, — in fact, to any sort of secondary school, — until well down into the century. For this general apathy toward education there were political, social, and economic causes. The recurrent Indian wars, the lack of a stable currency, the unsettled political status of the colonies, the pioneering and consequently unstable nature of the rapidly increasing body of newcomers, the conditions incident to a pioneer period of settlement, unsatisfactory trade relations with the mother country, — all these and more tended to overshadow in importance more intellectual and erudite activities. Any type of secondary school would have suffered under such conditions.

The nature of the Latin school itself, however, had much to do, in the end, with its gradual dissolution and consequent replacement by another type of secondary school. It was an institution for a particular social class and for a special group within even that class. It was intended to serve the needs of only those who expected or hoped to go on to college, — and that primarily in order to become ministers, — or of those who hoped to become leaders in the government. This meant that only the boys at the top of the social and intellectual as well as financial strata would be given consideration in the management of these schools. For girls there were no schools which provided education beyond the rudiments. The tendency was clearly to keep the more advanced learning within the possession of a few and to allow only a minimum of other classes to receive educational advantages, and that largely if not wholly as a privilege instead of as a right. The type of studies taught, the methods used, the nature of the topics within the textbooks, the objectives set up, all the details of the schools, branded them as an institution for the aristocrats, and for this reason the citizens refused to support them. The Latin grammar school became

the victim of its own exclusiveness. It cared not for the interests and welfare of any but a very select group. The merchant and the tradesman, — who were becoming an increasingly numerous and powerful group in the colonies during the eighteenth century, — the man on the street, found no place in the plans or conduct of the Latin grammar school. Because of its un-American, its exclusive, its aristocratic and selfish policy the school failed of sanction, lost both financial and moral support, became itself a beggar and finally an outcast. It was narrow, academic, aristocratic, selfish, knowledge-centered, dehumanized, and unsocialized. By the end of the first quarter of the eighteenth century, therefore, it had lost all prestige and was on the decline as a secondary school. It failed to make adjustments with the changing social needs; it did not perform its duties, and therefore lost its rights and its opportunities.

The middle period. *Transition types.* As the origin, growth, and decline of the Latin grammar schools can be epitomized in a phrase, — the interests of a class, — so might the spirit of the "academy movement" be summed up in three words,— the general welfare. It was Benjamin Franklin, the greatest social statesman the United States has ever produced, who projected the idea of an educational institution devoted to the general welfare in the form of the American academy. His original idea was never completely realized in the institution which he founded in 1749, but he started a train of thought that later became objectified in a distinctively American educational institution.

The American academy had its origin in and has developed out of an effort to provide an education beyond the rudiments to more than a single group within the nation. It is the intermediate step between higher education for a selected class and full educational opportunity for all, without let or hindrance. It was not clear to the founders and patrons of the academy just how to proceed to expand and extend educational opportunities. The development of their efforts

produced an institution which was distinctive because of the varieties of form, objective, clientele, method of support and control, which have characterized it. The academy developed as the secondary school which serves groups instead of a group. Originally it was intended to serve the middle class as distinct from the upper class. As time went on, it was evident that this class was itself made up of a variety of groups each with a distinctive demand and need. As the academy became popular with the upper class, a like condition was found to exist within this social stratum. Influenced undoubtedly by European example, and perhaps directly by settlers from Scotland, the solution that was offered and the policy that was inaugurated were to offer a type of training with a specialized objective for each of those groups.

There was no decided break and sharp line of demarcation between the decline of the Latin grammar school and the rise of the academy. As the one gradually lost prestige and influence, the other came into being, gathered impetus, and finally took the place of prominence. The academy had its origin in the middle colonies, perhaps because they had first become the important industrial and commercial center. At any rate the Philadelphia Academy, founded by Benjamin Franklin in 1749, is the first institution of this type to be established. This school was managed by a board of trustees, supported by endowments, subscriptions, and tuition fees, open to boys anywhere in the colonies, with preference for local youth. The original plan of Franklin was to have the emphasis put upon the practical rather than the cultural subjects, for he wrote in his *Proposals*:

> As to their studies, it would be well if they could be taught everything that is useful, and everything that is ornamental. But art is long and their time is short. It is therefore proposed, that they learn those things that are likely to be most useful and most ornamental; regard being had to the several professions for which they are intended.[1]

[1] Quoted by E. E. Brown in *The Making of our Middle Schools*, p. 180.

Under such a provision and conception the classics would be included for such boys as desired to go on to college and to enter professions where such subjects were needed either as tools or as ornaments. In like manner, navigation, surveying, history, bookkeeping, and the like were included for the boys who needed such subjects as background and as preparation for the professions of life other than those designated the learned. Franklin was most insistent in his plans for emphasis upon the English subjects and intended to have established within the school an English division as well as a classical and a mathematical. He continued to insist upon this idea throughout his life, but the trustees never saw fit to carry out this part of the founder's plan. In course of time the school expanded, took on advanced courses, acquired prestige as a learned institution, and finally became the University of Pennsylvania.

This idea of a school for boys, which should offer a broader curriculum than the Latin schools and include trade and mercantile as well as cultural subjects, established and maintained by endowments, subscriptions, and tuition fees, serving particularly the needs of a group or region, received much favor in Pennsylvania, Maryland, New York, and even New England, before the Revolution. One of the most important of such schools was the Dummer School at Byfield, Massachusetts, established in 1762 according to the will of Lieutenant Governor William Dummer, who died in 1761. In management, control, and support this was a private school; it was then and is now a preparatory school for college. It was the transition school between the Latin grammar type and the New England academy. Within this school Judge Samuel Phillips was as a boy prepared for Harvard College, from which he graduated in 1771. It was undoubtedly the influence of Dummer Academy (so called in 1782), which influenced Judge Phillips to become so generous a benefactor of the two great New England academies which bear his name.

Affairs immediately preceding, during, and immediately following the Revolution were not conducive to interest in any sort of schools or academies. The decline of the Latin grammar school, which had begun earlier in the century, continued, and its fall was inevitable at the close of the Revolutionary War. But the new nation had to get on its feet, and the need for education was felt more keenly than ever; those closest to the affairs of war knew more surely than others the calamities that would befall the new nation if the youth had no privileges of education. Among this group was Samuel Phillips, who founded the Phillips Academy at Andover in Massachusetts and was co-founder with his uncle John of the Phillips Academy at Exeter in New Hampshire, the first in 1778 (incorporated in 1780) and the second in 1783. These have remained as the type of the true New England academy.

The true types. Both these academies were college preparatory in nature. They emphasized the classics, but by no means neglected the English subjects. They still continue as first-class private institutions, supported by income from endowments and bequests (largely from the Phillips families) and by tuition fees. They are and always have been definitely religious without becoming sectarian institutions. At Andover there was at one time a teacher-training school attached to the academy, and until recently a theological school also. Both these institutions are governed by a board of trustees, which has absolute powers. Throughout their long history they have maintained the high ideals and standards of their founders, who intended them as "fitting-schools for youth."

The ideas embodied in these early academies appealed to the leaders of affairs, — so much so that by 1830 there were known to be nearly two hundred such schools in the six New England states. Twenty years later these had increased to over one thousand and provided secondary-school advantages for more than thirty thousand pupils. The other colonies adopted the ideas; churches saw in such an institution a way to recruit their forces and spread their own particular doctrine;

private enterprise discovered that here was a source of income; class-conscious individuals made use of them to emphasize class lines; and other groups, — social, economic, political, religious, in nature, — found in the private academy a means of expression for their group ideas and purposes. The academy and its variants, the institute and the seminary, became popular all through the colonies, North and South. Since these schools were private institutions, government officials had no control over them; and no reliable records concerning their actual number are available. In Massachusetts, Vermont, and New York efforts were made to incorporate the academy by law as a part of the state system of schools, but it was a grafting and not a breeding process and met with little success.

In matters of organization the academies of the best type manifested certain characteristic features. They apparently recognized differences of needs as well as of abilities among their pupils, even though these were to a great extent a picked group. They tried to meet these conditions first by expansion of their programs of studies and later by organization of the wide range of studies within the programs into curricula, or, as they called them, departments. The need for athletic and social recreation was acknowledged and provided for, and in the academies there came into being rhetorical societies, literary clubs, social fraternities, athletic societies, and the like. In order to make such participation in extra-curricular activities possible the actual school day had to be shortened and schedules so arranged as to provide appropriate hours for carrying on these activities. The tendency of the Latin grammar school in its decline had been to admit boys of nine and ten years of age. The tendency of the academies was to admit boys not younger than fourteen or fifteen and to encourage older young men to enter. As a consequence the academies were able to do more advanced work and carry it on with a body of students who had some maturity of thought and of purpose. Finally, while

the Latin school had been largely a one-man institution, the expanded program of the academy made necessary a corps of teachers. This necessitated internal organization, which was usually of the departmental order. It was during this middle period of development in secondary schools that systems and methods of internal organization began to develop.

The academy brought into existence various types of secondary schools, such as the distinctly college-preparatory school, the military academy, the preparatory school for higher technical and scientific study, the denominational school, the select and restricted boarding-school, the school of a fad or of a cult or for some very specialized purpose. Each of these types had its own special objective, many of them developed methods and techniques peculiar to their objectives, some had very original means of support; all were schools for selected groups, not always determined by social or by economic lines of demarcation, but each clearly with a rather limited and confined terrain. Such differentiation did not, of course, come about all at once, nor did it come early in the history of the academy. It is the result, rather, of a long period of evolution and of more or less organized efforts to meet the demands of a dynamic theory of education and society.

Contributions. It is during this academy period of development in secondary education that a most significant and far-reaching movement began. Until well down into the eighteenth century, education beyond the rudiments had been reserved for the boys only. Under the leadership of Catherine Fiske, Mary Lyon, and Emma (Hart) Willard, following the War of 1812, leading citizens were forced to begin thinking about some sort of further education for girls, — a movement which has culminated in provision for the higher education of women not only in colleges of their own but on an equal footing with their brothers in coeducational higher institutions. These first secondary schools for girls were more often than not spineless and

amœba-like. They were known variously as "Female Institutes," "Female Seminaries," "Miss ——'s Select School for Girls," and the like. They were called finishing-schools, the idea being, presumably, that here a finish, a polish, if necessary a veneer, would be applied to the young ladies, which would make them highly desirable and valuable domestic ornaments. The conception was well in keeping with the current thought about girls and women at that time. Girls were thought of, when they were considered at all, as a sort of clinging-vine, Dresden-doll, bric-a-brac type of humanity. For those, therefore, to whom any sort of higher learning was to be given the instruction was to be such as would enhance the decorative rather than the utilitarian value of this very delicate specimen. The work of the three women mentioned above was largely one of breaking down this conception and of substituting for the dancing, embroidery, dilettante French, and mincing steps a program of studies with an intellectual challenge for the young women whom they visioned as co-partners with men in the great tasks of civilization. Again, this was a manifestation of the characteristic spirit of the academy movement, the development of an institution with an objective determined by a selected group. The movement toward setting women on the high road to more extensive and richer fields of learning is a distinct contribution from the academy movement.

Another contribution was the impetus given to teacher-training by the effort to provide a worth-while education for girls. The demands for literally thousands of teachers in elementary schools, the recognition of feminine tact and taste as particularly fitting prerequisites for instructors of children, the growing and insistent demand on the part of the young women for constructive tasks, — all these and more conspired to develop a very necessary and a very constructive type of school, the teacher-training school, the normal school, the normal institute, and the like. The relative merits and demerits, the successes and failures, of the normal

schools need not here be considered. These schools are directly a product of the effort, during the last part of the eighteenth and well down into the nineteenth century, to meet specialized group needs by the organization of compartmentalized secondary schools.

Thus did the young democracy attempt to work out its educational salvation. It tried to organize secondary schools around the service concept, and it attempted to train up its boys and girls in the ideals of a citizenship founded upon the spirit of nationalism. The need of the hour was for a training of youth that would make for service and for leadership, and it was this which the academies supplied. They became institutions of the dynamic order. This sectional, partisan spirit and attitude continues in the academies to the present. As will be seen later, the academies have now become largely denominational and parochial schools, and it is this conception of intense group consciousness that provides support, — both moral and financial, — for this type of secondary school in a democracy. Devotion to a cause, small-group consciousness, loyalty to a party, are all forward steps from individual and personal selfishness toward a complete social solidarity and racial unity, but they are not ultimate ends of the highest order.

The modern period. *Public demands.* It is not surprising to learn from history that the people at large were not satisfied with the American academy as the instrument of secondary education. The idea of a graduated system of schools extending from the rudiments through the higher branches, which had been visioned in the ordinance of 1647 and later advocated by Thomas Jefferson, was still a current notion. The academy did not become an organic part of the public-school system, even though some of the states had attempted to legislate it into that position, — notably Massachusetts, New York, and Vermont. It served selected groups, but it did not meet generally the need and demand for educational opportunity beyond the fundamental subjects.

It must also be borne in mind that during the first twenty-five years of the nineteenth century the industrial classes were agitating in favor of the extension of school privileges and the regulation of working conditions, by which their children might be protected in their educational rights. The manufacturing industry was developing, and centers of rather large populations were beginning to appear. Labor groups were becoming strong enough to make their influence felt in public policies. Groups within the great middle class, — the tradesmen and merchants, — also found no schools adapted to their needs and demands; the academies were rapidly becoming fitting-schools for the colleges and did not offer training or instruction adapted to the needs of those who could not follow on to the heights of Parnassus but had to remain as toilers down in the valley. Leaders in practical affairs were urgently needed, and, whether justly or not, the people at large felt that the tendency of the college was to overemphasize the idealistic and to make its product impractical, to remove the students in spirit and in action from the workaday world. Public opinion was unwilling to accept the dictum that what was good preparation for college was equally good preparation for the practical affairs of an industrial and commercial people. Undoubtedly also the Napoleonic reforms in France, particularly as they affected the establishment and control of schools by the State, had their influence upon the friends of education in the United States, to strengthen their conception that it is the function of government to provide adequate school facilities for the children in a democracy.

So into the very midst of the academy movement there was injected the demand for an extension and expansion of the public-school idea to provide a free education beyond the rudiments for youth who could not be spared from home to attend the academy or who did not find in the academy the sort of educational opportunity which they and their parents deemed fitting, the institutions for this purpose to be under

public control. The expression of the sentiment which led to this demand is admirably stated by the report of the subcommittee in Boston appointed to consider the problem of the establishment of a public secondary school. This sentiment was crystallized into a movement for the establishment of public high schools (Boston, 1821) and later (Massachusetts, 1827) for legislative sanction of such schools. The movement for the third type of secondary education to grow up in the United States was thus begun. The experiment of universal secondary-school opportunity was about to be tried.

Initial efforts. The new experiment was begun by the city of Boston, Massachusetts, in the year 1821, by the establishment of the Boston English Classical High School (later, the Boston English High School) as a school in which to fit boys for effective participation in mercantile and mechanical pursuits. The program of studies for this school was decidedly not college preparatory in nature: it extended over a period of three years; it was based on an elementary-school course of five or six years. The school was not set up as a rival to the Latin school but as a supplement thereto. It expanded the public-school idea to include instruction at public expense in subjects, beyond the rudiments, which were concerned with things rather than with ideas. It was a successful undertaking from the very beginning, and by 1826 an effort was made to expand the idea still further and provide a similar school for girls. Such a school was established in this year; but sufficient accommodations could not be provided for all the girls who wished to attend, and the following year a policy of extending the scope of the writing and grammar schools for girls in the town was adopted instead and the high school for girls temporarily abandoned.

Meanwhile the town of Worcester, Massachusetts, was also experimenting with the idea of extending public-school advantages. The town had a Latin school for the boys who sought a classical education, and an "English" school, providing instruction in the fundamentals, attended by both

boys and girls. Such a condition was unsatisfactory, and in 1823 an effort was made to increase as well as reorganize the educational advantages which the town could offer. The result was the organization in 1824 of two higher primary schools, — an English school for boys and another for girls, both of which received pupils from the primary schools, — and a high school for girls, corresponding to the Latin grammar school for boys, which latter appears not to have been considered an organic part of the town system even though it was a town school. There seems to have been also either at this time or a few years later a school for boys, similar to the Boston English Classical High School, which was a part of the town organization of public schools.[1]

In 1827 Massachusetts passed the first law making the establishment and maintenance of high schools legal and, for towns of certain size, compulsory. Under this impetus other towns began to carry forward the experiment and to organize a system of schools to include high schools and to try out various features concerning them. The efforts of Massachusetts were noted by other states, and the movement spread widely up to the time of the Civil War. The state of New York was also doing interesting things during the second quarter of the nineteenth century in an effort to meet popular demand for improved and increased educational advantages. New York was strongly in favor of the academies as a solution to the problem and vigorously attempted to incorporate them into the organic system of public education for the state. It was an unsuccessful attempt, however, and had to be abandoned. The idea of establishing monitorial high schools in which the Lancasterian method would be adapted to advanced subjects of instruction was proposed about 1825 by John Griscom, who had returned from England enthusiastic over the system of Lancaster. This plan too proved unsuccessful. Still a different form of the experiment

[1] The material for this paragraph is taken from E. D. Grizzell's *Origin and Development of High Schools in New England before 1865.*

was the organization of "labor institutions," in which some instruction in academic subjects was given and much labor of various sorts was required as a means of pupil-support and of paying tuition charges. Again the experiment failed to verify the hypothesis. It was not until after 1850 that the full significance of the public-high-school idea caught hold in New York, owing probably to a persistent adherence to the plan of incorporated academies. By 1850 New York had proved the impossibility of such a procedure and became a participant in the great educational experiment of the century. In like manner other states were attacking the problem from several angles.

These were the years of trial-and-error procedure in the development of the public-high-school idea, years of struggle to realize the idea and to give it tangible form as an institution. At first the tendency was to establish a separate high school for boys and another for girls. Certainly in Lowell by 1840 there was a coeducational high school, and by 1845 Worcester had established a "Classical and English High School," open alike to both boys and girls. In this school also there appeared two separate curricula, one in the classics and the other in the English branches. The district idea, for which Massachusetts was responsible in her school law of 1789, and which had been copied by many of the states, proved to be a hampering influence upon the development of high schools, owing to the fact that each separate school district in a town would seek to organize a high school in addition to its primary or elementary school and refuse to join forces with the other districts to establish a single central high school for the town as a whole. On the other hand, the union-high-school idea was worked out in Scituate, Massachusetts, as early as 1836; union districts were formed in Vermont during the fifties, and by the time of the Civil War the union-high-school-district plan was well formulated. Dissatisfaction with the district plan also resulted in the development of organized systems whereby the schools of a town

were graded; as, for example, primary, intermediate, grammar, and high, or some such series. At first the tendency in the towns was to consider the high school an institution in which only the English branches were to be taught, and to assign the duty of college preparation to such of the Latin grammar schools as remained or to arrange with the local academy or one near at hand to perform this function. In time, however, the two functions were consolidated within the high school. Before this could come about a bitter struggle ensued which marks an epoch in high-school development since the Civil War. It is interesting to note that even before 1865 there were scattered attempts to organize high schools into junior and senior departments. In several places also fees were charged for attendance upon high schools, although the lower, or common, schools remained free. Such were some of the more common problems and procedures during the initiation of the high-school movement in the United States.

Originally the objective of high schools was to provide increased educational advantages for boys who would not proceed to institutions of still more advanced learning. Later and before 1865, a second objective, — namely, to prepare boys and girls to enter colleges, — was forced upon them, and their earlier name of English high schools was changed to high schools. For the accomplishment of the original objective it was well to admit boys at the age of nine or ten; but with the added duty it became necessary to demand more maturity together with better as well as added preparation, and the admission age was generally raised to twelve and a formal examination in the subjects of the elementary schools required. The double objective also made it necessary to devise and administer differentiated curricula, a problem which has been of increasing perplexity as the high school has developed. Criteria of successful completion of curricula were originally public examinations, which by 1865 had become nonpublic examinations within the school, with

success proclaimed by exhibitions or graduations of a public nature and evidenced by diplomas. Up to this time, in purpose, in tone, in form, or in management there appears little evidence of direct European influence upon the high school.

Critical times. The third quarter of the nineteenth century was a critical time for the American high school. Its very life was often in question; for there was serious doubt whether it was a legal institution, as well as uncertainty about the willingness of the people to approve it and give it moral support. Even if the majority desired it, there was no surety that the use of public funds for its support could be justified. But perhaps the greatest danger to its life lay in public apathy toward education of any sort, and the doubts within the minds of many as to whether such a school and one established on so lofty an ideal was even desirable. The friends of education were sure of its desirability and necessity, but the form of government called for conviction on the part of great numbers in order to make the high school a going concern. The conviction was undoubtedly becoming more general, and it was during these years that the struggle went on to secure a more nearly universal diffusion of the conception and to establish legal sanction for this kind of school. It was the determination of the leaders in the educational life of the nation to have schools under public control, so they might serve public needs as the public demanded and not be able to block social progress because they stood for party or sectarian or social-class interests. Accordingly this third quarter-century was the time when the determined effort was made to establish in practice what had long been a theory and for seventy-five years, — since the Massachusetts constitution of 1780, — had been a stated policy of government; namely, that schools and the means of education should be encouraged by the State. This meant, they believed, that to encourage most effectively involved support, and support in turn involved control. The struggle was brief but decisive.

High schools had been established throughout many of the states by 1850 to 1860. Many places claimed to have high schools when they had only advanced elementary schools. This was, in fact, the manner in which high schools most generally came into existence, and for that matter still evolve. They would not be created out of hand and come into being over night by order or decree, but certain pupils would seek learning more advanced than was found in the regular work of the town school. To meet the demand, the teacher or teachers would give instruction in these advanced branches. Soon there would be a considerable nucleus of students receiving advanced instruction, and some sort of gradation would become necessary. Out of this necessity would arise a separate department within the town school, which would be called a high school. Under the district system it would and did come about that each district would have its own high-school department within its district school, and no one of the high-school departments would be efficient. The sensible procedure which suggested itself was to consolidate the high-school work into a single school, but the districts were jealous of their educational prerogatives and vigorously objected. In the end, after long periods of campaigning sometimes, the common sense of the majority would prevail and a town high school would be established. To this extent the high school has been an evolution from lower forms.

As it became evident that boys and girls could be provided with educational advantages of an advanced character within their own home area, there grew up a demand that these new schools should take such children as desired to prepare for entrance to the colleges. Some of the academies were having financial difficulties and appealed for aid from public funds. Wisely the school authorities, in the main, agreed to assist, with a provision for a certain amount of control which gradually became absolute control, and academies soon became absorbed into the public-school system.

In these two ways, as well as through other minor occurrences, the higher institutions aligned themselves with the forces at work to extend and expand educational opportunities. Inevitably, therefore, the high schools took on a collegiate tone and atmosphere, and the greater the sanction as well as moral support given them by the colleges the more intense and evident did this college tone and atmosphere become. This was the powerful environmental factor which was to enter into the life of the high school and serve to modify its original nature as the "people's college," and before the end of the nineteenth century to help to determine the function of the high school as twofold. In the days when the high school was but an infant institution the college served as a foster mother to it, but, like so many parents, the colleges performed many mistaken kindnesses and tried too vigorously to change the nature of the young institution and force it to conform to the will of a more experienced and mature institution. The college sanction during the years while the high school was being established was most welcome, — indeed, most necessary, — and its influence upon high-school organization, standards, and curricula was wholesome; on the other hand, that influence had a tendency to restrict and to narrow the healthy development of the infant high school. As the latter grew up, however, it manifested its vigorous personality and has been able to profit by all these early influences and at the same time to develop its own life according to the original conception by appropriating the spirit of the precepts instilled by the foster parent.

In a similar manner there were other influences, not so wholesome, which made themselves felt upon the life of the early high school. Some of the academies continued strong and stable institutions. Many of them fought the development of the high school, since they thought they saw in it a force which would weaken them and draw support away from their work. They had good reason to think so, for in many places the public and democratic nature of the high

school brought adherents to it and thus actually compelled academies to abandon their work.

The emigration to the newly opened Western territory which had taken place in the early part of the century still continued and was followed by a tide of immigration from foreign countries. This flow of population substituted, in the centers where high schools were being established, a group with little interest in higher education and unacquainted with American educational policy or tradition for the one which had evolved this same policy and tradition. To this new group the idea of group schools for group interests was the policy they were accustomed to and therefore satisfied with. The growth of industrial centers created a demand for cheap labor, and the introduction of machines made the use of children possible as a source of supply for such labor. The new population was accustomed to a system which utilized child life as a source of producing wealth, and any plan which prevented such exploitation was not acceptable to this group. Industry too needed the labor and lent its influence to retard the growth of free public high schools.

Such negative influences were bound to focus at some one point ultimately in a concerted effort to suppress or abolish the institution which was the source of all their difficulties. This was what happened, and the focus was the question of the legality of the institution; that is, the high school. Agitation was begun and continued as to the legal right which a community had to use public funds to provide schools which taught subjects beyond the elementary branches. The contention of enemies of the high school was to the effect that it was proper and legal to use public tax money to provide free education for all in common knowledge; but when the stage was reached where some children desired instruction in one branch of knowledge, others in another, and still others in another, and so on through the varied needs and desires of civilized society, then it no longer was the right or the duty of the State to use public funds to meet these individual

needs. It became an individual, a personal, matter, and the persons immediately concerned should pay the bills instead of expecting the public at large to stand this expense. They said the high schools were satisfying private and not public needs; therefore such institutions were illegal, and public funds could not be used to support them.

The issue was here clearly defined; and if illegal character could be fixed upon the high schools, then they must be abolished. The agitation reached a head in 1872 in the state of Michigan, which had become one of the Western states to begin definite organization of a state system of free public schools from elementary straight through the university. The school board of Kalamazoo, Michigan, decided to establish a high school. Charles E. Stuart, one of the citizens, objected and filed suit to prevent the collection of the necessary tax. The suit went to the Supreme Court of the state of Michigan, and the decision was written in 1874 by Chief Justice Cooley. This decision made it clear that the high school was a legal institution, that the state had a right under the law to establish and maintain schools at any level, and such right was not limited to the work of the common schools. It says:

> We content ourselves with the statement that neither in our state policy, in our constitution, or in our laws, do we find the primary school districts restricted in the branches of knowledge which their officers may cause to be taught, or the grade of instruction that may be given, if their voters consent in regular form to bear the expense and raise the taxes for the purpose.[1]

This decision once for all established the legal status of the high school; and although there have been since similar cases and decisions in twenty-six other states, the verdict has always been the same and rendered largely on the precedent of the Kalamazoo case. So the high school weathered the storm and came through safely. This date marks the

[1] Quoted from E. P. Cubberley's *Readings in the History of Education*, p. 589. Used by permission of and by arrangement with Houghton Mifflin Company, the authorized publishers.

arrival of the high school at its majority. From now on it must stand on its own feet and justify itself by its response to the educational needs of the community it would serve. From 1874 its evaluation by public judgment has depended entirely upon its conformity to the function determined by its nature and by the duty imposed upon it by its foster parent. Its efforts to do these things make up its history for the next fifty years.

Reorganization efforts. The settlement effected by the Kalamazoo case was the exact stimulus needed by the high school to bring its latent possibilities to the fore. The nation as a whole was recovering rapidly from the Civil War, there was a growing demand for increased educational opportunity, the evolving sense of nationalism made it imperative that governmental security should be guaranteed, an eagerness to be learned and cultured was manifest in all grades of society. On all sides the social and economic as well as political significances and applications of the theory of democracy were coming to be recognized. Under the Morrill Act land grants were available with which to establish institutions of higher learning under public support and public control. The full significance of the Massachusetts Ordinance of 1647 was now apparent. Slowly at first and then with gathering momentum the crusade for a well-articulated system of free public education from the primary grades through the university swept over the country, and the American conception of secondary education as the middle rounds in an educational ladder began to be realized in practice. The problem for the next fifty years was to be that of perfecting a system of public education supported and controlled by government.

The poorly articulated and ill-organized division of primary, intermediate, grammar, and high schools gradually worked itself out into a system of eight grades of one year each for purposes of common education, and of four grades of one year each for purposes of college preparation and of training for immediate entry into life activities. Exactly

why the division was made 8–4 is uncertain, and certainly there is no scientific justification for it. By the end of the nineteenth century all the states had adopted the organization of pre-college education into an elementary school of eight grades — in a few it was seven, and in fewer it was nine — and a high school of four grades. Thus in those states where a state university existed it became possible, theoretically, for both boys and girls to receive an education at public expense in government-controlled schools from the beginning of school life through to the end of a college education. In practice it has come about that the question whether the time and earning capacity of a boy or girl can be dispensed with in a given family over so long a period enters in as a determining factor. But the chances have been made available at a greatly reduced cost to the individual over any previous organization of educational opportunity.

Here, then, was the culmination of the evolutionary process by which a system of free public educational opportunity for all the children of all the people had come into being. It consisted of three units: elementary, secondary, and higher. The problem of interrelations between these units, the question of bases for distinction between each, the problem of criteria by which to determine the length of each unit, are all matters of current discussion and procedure. They have to do with present conditions in the system and therefore must be considered separately in a later chapter. The important point to be noted here is that secondary education in the United States has come to mean that education which occupies the middle portion of a free and public system of educational opportunity, which latter begins with the simplest type of learning and continues through to the most advanced. Only with such a vertical organization (so it is conceived in the United States) can there be full equality of educational opportunity untrammeled by any condition except each individual's own intellectual ability to ascend through the system.

In the United States political and social philosophy says that "governments derive their just powers from the consent of the governed." Without regard to social or economic status a voice in law-making and law-enforcement is accorded to all. That means that every citizen is a maker of laws, — at least potentially, — and equally is responsible for the enforcement of law. If therefore the spirit of justice is to prevail through legal enactments, the makers must be well informed, well read, trained to weigh conditions of life and living, and to evaluate them so as to make just judgments. On the very face of the matter, therefore, free and unbroken opportunity for the acquisition of knowledge and for practice in its use must be provided for all, — and that all means 100 per cent. The success of this experiment in government which the United States is making depends absolutely upon the degree to which every citizen can be made to act on the stimulus of a well-informed, well-balanced, and well-developed central nervous system; that is, the degree to which individual initiative is allowed and encouraged to develop constructively. As a consequence there has evolved this vertical form of organization for the public-school system, open at the top and, in theory, not closed at any specific point for any particular portion of the population. This has produced a very large measure of local autonomy in the control and management of the system, which has the disadvantage of producing a rather unstable and more or less fluctuating system, which condition has a tendency to retard the realization of objectives. Experimental procedure based on the trial-and-error theory is always a slow procedure. The advantages do, however, appear to outweigh the disadvantages, for such a plan allows for a wide spread of educational opportunities. Practice in evaluation and judgment is amply provided, a sense of responsibility is fostered and developed, individual initiative and the capacity to initiate procedure are not only sanctioned but made necessary, the spirit of emulation is fostered by natural rather than by artificial

means, and in general the virtues that make for efficient law-makers as well as for obedient servants of the laws are given large opportunity to come into being and to develop. It all makes for a looseness of organization, for flexibility, for a lack of rigidity and fixity, which is but another way of saying that it is a procedure much like nature itself, which, while law-abiding, provides ample opportunity for variation and encourages the development of individual differences. Real freedom is at base only liberty within the law, and not action without law.

Quantitative status. There exist now in the United States two types of secondary school: the private high school, or academy, and the public high school. The government exercises no control over the former, nor does it support it. The latter is a government-supported and government-controlled institution, an organic part of the public-school system of each state. The changes which have taken place since 1890 in the number of both types of secondary school, in the number of teachers and number of pupils enrolled in each, are shown in Table XI. The data for the private schools are incomplete, since such schools are not under any obligation to report to the United States Commissioner of Education. No reliable data for either type of school are available earlier than the year given. Such figures in the mass are not so significant as are percentages of comparison. Table XII presents significant data concerning the public and the private secondary schools.

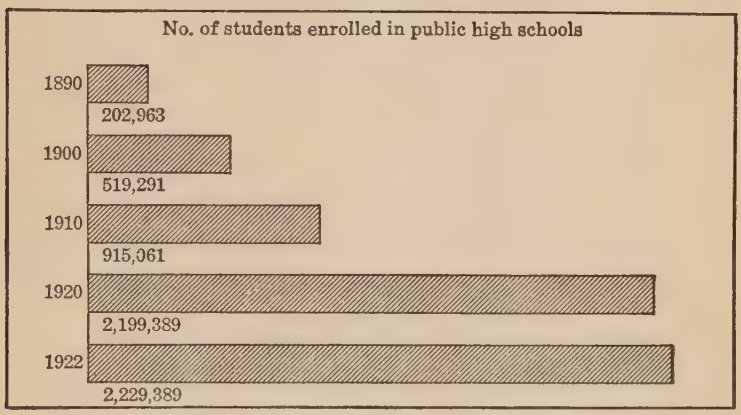
It is noticeable that since 1890, the date when reliable data first became available, the percentage of secondary schools which are public has steadily increased. In like manner the percentage of the total population in the nation attending the public high schools has increased very rapidly; namely, from 0.32 per cent to slightly over 3 per cent. On the other hand, the private schools have slightly more than held their own with the increase in population. The difference between these two types of school in this matter is so great,

TABLE XI. GROWTH OF SECONDARY SCHOOLS IN UNITED STATES[1]

Year Reported	Public High Schools			Private Academies			Total		
	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
1889–1890	2,526	9,120	202,963	1,632	7,209	94,931	4,158	16,329	297,894
1890–1891	2,771	8,270	211,596	1,714	6,231	98,400	4,485	14,501	309,996
1891–1892	3,035	9,564	239,556	1,550	7,093	100,739	4,585	16,657	340,295
1892–1893	3,218	10,141	254,023	1,575	7,199	102,375	4,793	17,340	356,398
1893–1894	3,964	12,120	289,274	1,982	8,009	118,645	5,946	20,129	407,919
1894–1895	4,712	14,122	350,099	2,180	8,559	118,347	6,892	22,681	468,446
1895–1896	4,974	15,700	380,493	2,106	8,752	106,654	7,080	24,452	487,147
1896–1897	5,109	16,809	409,433	2,100	9,574	107,633	7,209	26,383	517,066
1897–1898	5,315	17,941	449,600	1,990	9,357	105,225	7,305	27,298	554,825
1898–1899	5,495	18,718	476,227	1,957	9,410	103,838	7,452	28,128	580,065
1899–1900	6,005	20,372	519,251	1,987	10,117	110,797	7,983	30,489	630,048
1900–1901	6,318	21,778	541,730	1,892	9,775	108,221	8,210	31,553	649,951
1901–1902	6,292	22,415	550,611	1,835	9,903	104,690	8,127	32,318	655,301
1902–1903	6,800	24,349	592,213	1,690	9,446	101,847	8,490	33,795	694,060
1903–1904	7,230	26,760	635,808	1,606	9,566	103,407	8,836	36,326	739,215
1904–1905	7,576	28,461	679,702	1,627	9,850	107,207	9,203	38,311	786,909
1905–1906	8,031	30,844	722,692	1,529	9,787	101,755	9,560	40,631	824,447
1906–1907	8,804	32,774	751,081	1,434	8,956	97,110	10,238	41,730	848,191
1907–1908	8,960	35,399	770,456	1,320	8,564	91,652	10,280	43,963	862,108
1908–1909	9,317	37,491	841,273	1,301	8,704	93,656	10,618	46,195	934,929
1909–1910	10,213	41,667	915,061	1,781	11,146	117,400	11,994	52,813	1,032,461
1910–1911	10,234	45,167	984,677	1,979	12,073	130,649	12,213	57,240	1,115,326
1911–1912	11,224	51,853	1,105,360	2,044	12,383	141,467	13,268	64,236	1,246,827
1912–1913	11,277	53,738	1,134,771	2,168	13,354	148,238	13,445	67,092	1,283,009
1913–1914	11,515	57,909	1,218,804	2,199	13,890	154,857	13,714	71,799	1,373,661
1914–1915	11,674	62,519	1,328,984	2,248	14,026	155,044	13,922	76,545	1,484,028
1915–1916	12,003	68,277	1,456,061	2,203	13,958	155,135	14,206	82,235	1,611,196
1917–1918	13,951	81,034	1,645,171	2,058	14,199	158,745	16,009	95,233	1,803,916
1919–1920	14,326	97,654	1,857,155	2,093	14,946	184,153	16,419	112,600	2,041,308
1921–1922	14,056	113,680	2,229,407	1,963	14,237	186,641	16,029	127,917	2,416,048
1923–1924[2]	19,442	144,230	3,389,878	2,500	15,703	254,119	21,942	159,933	3,643,997

[1] Compiled from Reports of U. S. Commissioner of Education. [2] Estimates provided by U. S. Bureau of Education.

in fact, that over 93 per cent of all pupils in secondary schools are now in public high schools and slightly less than 8 per cent are in the private academies, whereas the percentages for 1890 were 68.1 and 31.9 respectively. The proportion of colored pupils enrolled in public high schools has appreciably decreased, while it has more than doubled in the private institutions. The proportion of men teachers to women



GRAPH SHOWING NUMBER OF STUDENTS ENROLLED IN PUBLIC HIGH SCHOOLS

If the population of the United States had increased as rapidly as its high-school enrollment since 1890, its general population would now be 687,861,581 (Division of Research, National Education Association)

teachers in the two types of school varies very little, and there has been on the whole very little change throughout the years. The tendency of the percentage of boys in the student population to increase steadily in the public schools and for the percentage of girls to decrease is matched by the reverse condition in the private schools.

The public high schools are coeducational, for at no time since 1890 have as many as a hundred been reported as non-coeducational. The private academies, however, remain true to form, for out of the 1963 which reported in 1921–1922 there were 363 for boys only and 720 for girls only, making more

than one half of them non-coeducational. The private high schools and academies which report are also largely institutions controlled by religious organizations, since 1443 are reported as under denominational control and 520 as under nonsectarian control. Of the former number 949 are classified as Roman

TABLE XII. DISTRIBUTION BY PERCENTAGES OF VARIOUS ITEMS AFFECTING SECONDARY SCHOOLS IN UNITED STATES, 1890–1922 [1]

Showing the Per Cent	In Public High Schools						In Private Academies					
	1890	1900	1910	1920	1922	1924	1890	1900	1910	1920	1922	1924
That number of schools has been of all secondary schools	60.8	75.2	85.2	87.3	87.7	88.6	39.2	24.8	14.8	12.7	12.3	11.4
That student enrollment has been of total population	0.32	0.68	1.0	1.76	2.04	3.2	0.15	0.15	0.13	0.17	0.17	0.22
That student enrollment has been of enrollment in all the secondary schools	68.1	82.4	88.6	91.0	92.3	93.1	31.9	17.6	11.4	9.0	7.7	6.9
That the colored-student enrollment has been of total enrollment	2.9	1.6	1.4	1.5	1.5	1.5		2.2	3.3	5.3	5.0	4.3
That teachers have been men . . .	39.5	49.9	45.3	35.2	36.2	35.9	45.4	42.2	40.5	38.5	38.9	39.4
That teachers have been women . .	60.5	50.1	54.7	64.8	63.8	64.1	54.6	57.8	59.5	61.5	61.1	60.6
That students have been boys . . .	42.1	41.5	44.2	43.8	46.4	47.4	50.5	50.5	47.0	45.6	45.5	48.3
That students have been girls . . .	57.9	58.5	55.8	56.2	53.6	52.6	49.5	49.5	53.0	54.4	54.5	51.7

Catholic, 92 as Baptist, 84 as Episcopal, 64 as Methodist, 60 as Presbyterian. The remainder are scattered through 26 different denominations. The enrollment of students follows approximately the same order, there being more students in the Roman Catholic private secondary schools than in all the other private high schools and academies under religious control.

[1] Compiled from Reports of United States Commissioner of Education.

If all the public high schools in the United States are arranged in groups so that all schools with an enrollment of 1 to 50 are in one group, all schools with an enrollment of 51 to 100 are in another group, and so on, it is found that one half of all the schools have fewer than 50 students each

TABLE XIII. NUMBER OF PUBLIC HIGH SCHOOLS WHICH ENROLL THE NUMBER OF STUDENTS INDICATED [1]

Number of Students	Number of Schools	Per cent of Total
1 to 50	7042	50.4
51 to 100	3422	24.5
101 to 150	1220	8.9
151 to 200	613	4.4
201 to 250	310	2.3
251 to 300	234	1.7
301 to 350	181	1.3
351 to 400	130	0.9
401 to 450	100	0.7
451 to 500	67	
501 to 550	63	
551 to 600	54	
601 to 650	48	
651 to 700	27	
701 to 750	37	3.0
751 to 800	46	
801 to 850	22	
851 to 900	17	
901 to 950	23	
951 to 1000	17	
Over 1000	278	1.9

Note. These data refer to the situation under the 8–4 organization. The reports dealing with the 6–3–3 organization, published since 1918, have been so confusing as to make impossible any later reliable compilation concerning this problem.

and approximately 75 per cent have fewer than 100 students each. Only about 5 per cent have an enrollment of more than 500 students each. The facts are presented in Table XIII. Perhaps this situation is not so significant as the fact that 52 per cent of all the students in public high schools are

[1] Compiled from Report of United States Commissioner of Education, Vol. IV (1916–1918), p. 135, Table 4.

attending city high schools which have an average enrollment of 653; in village high schools with an average enrollment of 174 are found 8 per cent of all high-school students; the remaining 40 per cent of high-school students are found in rural high schools which have an average enrollment of 94. The smallest high school reported to the United States Commissioner of Education in 1917–1918 had 2 students; the largest had 8440 students. There is, therefore, one small group of large high schools, and a second large group of small high schools; both are highly important.

It would appear that the United States officially has little concern over the private high schools within its borders. They serve but a meager portion of the population, and there is little tendency toward any relative increase in their numbers in proportion to the population. None, individually, is very large, the average number of students to a school being 95. On the other hand, the United States should manifest great concern over its public high schools, which have been of rapidly increasing importance as an educational agency and now provide an education beyond the elements for a veritable army of boys and girls soon to become citizens. Out of this army will come the leaders in all walks of life, and the perpetuity of the form of democracy for which the United States stands depends upon the social, ethical, civic, cultural, and vocational attitudes which these leaders possess. The success of a great experiment in human government depends upon the results which the United States can obtain from her conception of a secondary school; namely, the American high school.

REFERENCES

General

CLEMENT, J. A. Principles and Practices of Secondary Education, pp. 156–176, 177–228.

INGLIS, A. Principles of Secondary Education, pp. 161–200, 203–258.

JUDD, C. H. Introduction to the Scientific Study of Education, pp. 14–46.

UHL, W. L. Principles of Secondary Education, pp. 47–106, 423–468.

France

Farrington, F. E. French Secondary Schools (entire book).
Kandel, I. L. Educational Yearbook of the International Institute of Teachers College, Columbia University, 1924, pp. 245–277.
Kandel, I. L. The Reform of Secondary Education in France (entire book).

Germany

Kandel, I. L. Educational Yearbook of the International Institute of Teachers College, Columbia University, 1924, pp. 277–329.
Paulsen, F. German Education — Past and Present (entire book).
Russell, J. E. German Higher Schools (entire book).

England

Balfour, G. Educational Systems of Great Britain and Ireland (entire book).
Kandel, I. L. Educational Yearbook of the International Institute of Teachers College, Columbia University, 1924, pp. 195–245.
Norwood, C., and Hope, A. H. Higher Education of Boys in England (entire book).

United States

Brown, E. E. The Making of our Middle Schools (entire book).
Davis, C. O. Public Secondary Education (entire book).
Grizzell, E. D. Origin and Development of the High School in New England before 1865 (entire book).

CHAPTER III

THE PUPILS

THE PRINCIPLES OF MEASURING

The distribution of individual differences. *The law of normal distribution.* It is the task of education to make changes in human beings, and one of the most outstanding points of difference between nineteenth-century education and twentieth-century education is the greater clarity of objectives and the possibility of measuring the progress of pupils toward these changes. When society knows what it is desirable to teach and can measure scientifically the steps in the attainment of desirable knowledge, skill, and social understanding, it is then possible to make education a scientific, orderly process. While this movement to test and measure school pupils and school subject matter is but a quarter of a century old, its discoveries have been of sufficient validity to justify profound changes in secondary-school practices.

The possibility of measuring a complex organism, such as a human being, seemed quite impossible until a Belgian mathematician discovered that all variables tend to follow a definite law, so that whether one measures the midveins of maple leaves or the height of men or the number of times that ten pennies turn up heads, the results, if the investigation is carried far enough, will tend to assume a definite characteristic form. This form has been stated as the law of normal distribution, or as the theory of chance; it is often pictured as the frequency curve or frequency polygon, and seems to be valid in all cases where the factors which control variability are so complex as to defy human analysis. Hence

by measuring any segment of human behavior which has sufficiently definite characteristics to be isolated from the rest of human behavior, and continuing this measurement with a great number of individuals, it becomes possible to predict the normal behavior of human beings in general in regard to this particular trait; that is, to formulate the law of normal distribution.

The measurement of individual differences. When the law of normal distribution in respect to any particular human trait has been formulated, it becomes possible to compare an individual or a group of individuals to standards set up by this law and to state whether the individual or group is above or below these standards; furthermore, by simple calculations based upon a mathematical consideration of the frequency polygon it is possible to state rather definitely how much or how little the individual or group varies from the normal behavior. Hence for the first time in history it has been possible to say how much different one human being is from another in terms of definite units; that is, we have a yardstick with which to measure human traits. The interesting thing about this yardstick is that although we do not know exactly the upper or lower limits, we do know the central point, and so we have to measure individual differences in terms of variation from this point. The technique of measuring from a middle point is somewhat different from measuring with a yardstick, and this matter will be considered in a later paragraph; also, the fact that the yardstick for each human trait differs in unit of measurement for every trait complicates the measurement technique, although it does not make the measurement less valid.

Standard tests and scales. It is evident that the first step in the measurement of individual differences is to isolate effectively from the general nexus of human responses the trait or skill to be measured, and upon the accuracy with which the test covers all the manifestations of the trait to be measured, as well as the completeness with which it

eliminates all manifestations of other traits, depends the validity of the test. *Validity*, then, is the degree to which a test actually measures what it purports to measure. Without validity there is no real measurement of the trait; and while it is often impossible to cover all manifestations of a trait, it has been found that selection based upon frequency of occurrence of the manifestation of the trait to be measured makes a valid test.

A standardized test is one that has been tried out, revised, and tried out again until it has been proved to be valid and found to measure the trait in question consistently. Such a test is declared to be reliable, for *reliability* is the degree to which a test really measures whatever it does measure; that is, its accuracy of measurement. Reliability is necessary if it is desired to test the same group more than once or to compare results with other groups examined by the same test. Unreliability is usually due to brevity of the test, poor selection of the units in the test, physical conditions under which the test is given, and the subjectivity of the items.

It is this last feature, — subjectivity, or the extent to which the general personality of either examinee or examiner enters into the scoring of a test, — that has made the examination of school children in the past such an unreliable matter. Hence the opposite trait, — *objectivity*, or the degree to which the personal element or judgment is eliminated in the scoring of a test, — is one of the essential earmarks of a good test. If a number of examiners scoring the same tests arrive at the same scores, we may conclude that the test is objective; that is, that subjectivity has been eliminated.

Thus it comes about that one of the essential marks of a standardized test is that it has *norms*, or standards for comparison, which show what a normal individual may be expected to do under normal circumstances. Where these norms have been developed for different ages or different grades, we have age norms and grade norms; where they have been developed on the basis of progress, we have

achievement norms. Without such norms, or standards, there is no basis for comparison outside of the group which took the test; and unless the group be very large and representative, judgment as to the comparative achievement of the group is of doubtful value. Yet it is exactly this feature of a standardized test that gives it its greatest value as a yardstick, and upon the completeness and correctness of the norms depends the usefulness of the conclusions which the examiner may make as to what future action should be based upon the results of the test.

Lastly, a test should be characterized by *practicality*, or ease of administration and scoring. Of course the test that engages the interest of the person to be examined is much more likely to test his ability than one which does not arouse his interest; so, too, the one that avoids mental conflicts and allows time for judgment and thought, yet is not long enough to tire or so difficult as to discourage, is more likely to succeed. Complexity of scoring, difficult technique in administration, and so on may be of no consequence where skilled examiners are available, but where such are lacking these factors become of great importance.

Thus we may say that upon the validity, reliability, objectivity, practicality, and availability of standards depends the question of whether a test is standardized or not; upon the completeness with which these qualities have been developed depends the test's accuracy; but only time can tell the worth of the test.

Kinds of tests. The testing movement began with an attempt to detect and classify feeble-minded children, resulting in the Binet-Simon Scale. This scale was adapted, after several attempts, to American children in the Stanford Revision of the Binet-Simon Scale, and has since remained the best individual intelligence test. During the World War great interest in intelligence testing was aroused by the attempt of the United States government to select individuals for various positions, and out of the interest engen-

dered by this attempt have come three other types of intelligence tests: (1) performance tests for individuals, including many form-board tests, puzzle tests, picture tests, and the like; (2) group intelligence tests of the army alpha type (paper-and-pencil tests, for the most part of a linguistic nature); (3) group intelligence tests of the army beta type (performance tests of a nonlinguistic nature, but reduced to pencil-and-paper form, for little children, illiterates, or non-English-speaking groups). All these tests were scales; that is, tests which began with simple exercises and proceeded by carefully graded steps to difficult exercises. Due to the fact that the individual tests require a skilled person to give them, as well as considerable time and consequent expense, the tendency in recent times has been toward group tests, although the latter do not measure so accurately.

Ever since the first spelling scale was devised in 1897, there have been increasingly successful attempts to measure the various units of educational work. These standardized tests may be classified as of six different kinds: (1) achievement tests, that is, tests that perform much the same function as a written examination in that they determine how much knowledge or skill the pupil has acquired in a given subject, such as French, algebra, or chemistry; (2) prognosis tests, which try out certain capacities or abilities of pupils to determine whether the individual should try a certain kind of educational work, as, for example, tests of mechanical, musical, or linguistic ability; (3) achievement scales, or proficiency tests, which, while testing achievement, also arrange the group of pupils in order of proficiency, so as to facilitate sectioning of classes, determine promotion, and so on; (4) score cards, which furnish an objective standard for rating buildings, equipment, or teachers; (5) practice tests, which ascertain the individual needs of the pupils and the degree and kind of drill to meet these needs, as in composition, stenography, and the like; and (6) character tests, which are designed to determine mental attitudes.

Use, functions, and defects of standardized tests. While in all probability teachers are able to rank pupils in order of merit with a considerable degree of accuracy, yet it has been repeatedly proved that subjective judgment of this sort is not capable of determining how much better one pupil is than another; indeed, any effort to grade pupils closer than five groups is largely wasted effort. But under the use of tests grading is possible to a much finer degree, and the degree to which one pupil exceeds another may be determined rather accurately. Standardized tests make possible much more accurate prediction as to the chances of success or failure of any given pupil in any given line of work, and this ought to save money for the school system, time for the pupil, and nervous energy for the teacher. The older methods of classification of pupils, — that is, by chronological age, achievement, or subject matter, — has been supplemented by a new classification according to mental ability; and this new basis of classification is far more fundamental in its operation than classification upon the basis of acquisition of knowledge, for education is essentially concerned with changes in human personalities rather than with the acquisition of information. These new tests also make possible the stating of achievement in terms of the individual pupil's ability, thus providing a fairer basis for marking the pupil and giving opportunity for the less gifted pupil to receive encouragement when he does his best. Furthermore, it becomes possible to diagnose specific difficulties or disabilities, or to suit the rate of progress to the individual capacity of each pupil; to give guidance to both teacher and pupil to an extent and with an exactness quite impossible under subjective judgment; and such judgment, objectively determined, does not arouse the feeling of resentment which is often present when one person judges another subjectively. Lastly, these standardized tests offer all manner of bases for comparison: they compare a pupil's achievement with his ability; they measure progress, by comparing the results of

tests given at the beginning and at the end of a period of work; they compare pupil with pupil, school with school, teacher with teacher, or any one of these factors with the general situation obtaining all over the United States. By a comparison of results the efficacy of different methods of teaching may be determined; indeed, a general index of the status of teaching can be derived objectively.

It is not the function of the standardized test to displace the teacher's mark or to supersede the teacher's judgment; rather it is the function of these tests to furnish standards by which to clarify, amplify, and correct such marks and such judgment. They are designed often to save time and effort, to prevent a pupil from doing again what he has already learned, or to place him where his efforts will count most. Due to their objectivity they make possible a tentative attitude toward education, make possible a more thorough attack upon both teaching and study; in short, they furnish a basis for the scientific study of education.

Perhaps the first thing to admit at this point in the consideration of standardized tests is that while all the foregoing statements are true of well-standardized and valid tests, of the two hundred or more tests now available for secondary-school grades not more than one quarter can be honestly called "standardized." Many have been developed by graduate students in the universities and put before the public without adequate trial or revision; many have been developed *in vacuo* as regards the teaching situation, and measure the merest externals of education; many of the earlier attempts are already out of date. Few of these tests accurately measure progress over a brief period, such as a year or a half-year; hence, since promotion is now upon this basis, they do not furnish so good an index of progress as one might wish. Also there are many important objectives in secondary education that are not tested, perhaps never can be measured, by such tests as these; indeed, the most important aspect of education — character building

— has most successfully resisted many attempts at measurement. Especially during these times of great changes in education do standardized tests quickly get out of date, become ill adapted to course of study or method of teaching, or examine pupils upon materials that are stale and out of date, and thus penalize the more up-to-date teacher and school system. When attempting to measure progress, especially over a short period of time, the results of testing are liable to be influenced by practice in taking such tests; thus progress seems to be more than has actually taken place. Again, since neither life nor education is static, norms and standards set up by these tests tend to become obsolete; and since their greatest value lies in thus furnishing valid, objective standards, unless these tests are kept up to date they are likely to prove unreliable guides. Already there are many inadequate tests in the field of secondary education, and such a condition is bound to become increasingly worse as time goes on and more changes in objectives or practices in secondary education take place.

Informal objective tests. Out of the results of the testing movement has arisen a strong impetus toward making teachers' marks more valid; hence there has arisen the necessity of making teachers' written examinations more objective. Thus it comes about that the teacher who wishes to make his marks more objective must give more objective examinations, — that is, must make examinations along objective lines, — for the purpose of examination of the work covered; and since no one else is competent to say in detail just what work has been covered, these tests must be made by the teacher for the particular group with which he is working. However, as these tests are solely for the purpose of testing achievement, such tests do not need to be standardized; the principal purpose is to make them valid and objective.

There are at least three kinds of questions one may ask on an objective examination: (1) recall questions; (2) recognition questions; (3) performance questions. Recall questions

test memory and information only and probably have been too much emphasized in the past. Recall questions are of two types, simple and completion. An example of the former would be "State the seven objectives of secondary education"; of the latter, "The number of high schools in the United States is ——." Recognition questions call for a varying degree of judgment plus a certain amount of information and, although they are more difficult to construct and score, are more likely to test power rather than information. The following are examples of several kinds of recognition question. (1) *Best-answer:* The most important function of the junior high school is (college-preparatory, exploratory, vocational). (2) *True-false* (±): Education takes place only in activity. (3) *Multiple-choice:* The median size of high schools in the United States is (under 25 pupils, 25–50 pupils, 50–75 pupils, 75–100 pupils, 100–150 pupils). (4) *Association:* Associate the following words with the second group of words, in pairs: (Ezekiel Cheever, Kalamazoo, John Dewey) (education by doing, Boston Latin Grammar School, legality of the high school). Performance questions are suitable for examination in the sciences, mathematics, shop, and the like, where strict specifications can be laid down and the time, number, kind of error, skills needed, and so forth can be controlled. In foreign languages a paragraph in that language telling the pupil to do a certain thing, such as to write the number five at the right of the paragraph, will test comprehension and can be easily and objectively scored.

In making objective examinations it is first necessary to decide the exact scope, the range of information or assignments or skills to be tested, then to list the most significant topics that have been treated. Under each topic the most important facts, attitudes, or understandings to be achieved should be outlined and then turned into questions of the types described above. If the test is to be valid, it should cover the whole field rather evenly and should test the ultimate objectives. It is well to arrange the questions in the

approximate order of difficulty, to use such time limits that all can barely complete the test, to word questions so that a mark or a word or two can answer any question, and to make questions of such difficulty that the average pupil will be able to answer at least half the questions.

Methods of expressing results. Results of formal standardized tests or of informal objective tests are first expressed in individual scores. Important questions in the test are often weighted, — that is, the score multiplied by 2, 3, or 4, — to give relative value. True-false questions are often subjected to the formula $Right - \frac{wrong}{2} = score$, in order to eliminate the factor of guessing. But after the individual scores are obtained, it is usual to express them in a frequency table which has from fifteen to twenty divisions. From this frequency table may be found the measures of central tendency, measures of variability, and measures of relationship, described in the following section. By comparison of the individual score in a standardized test with the norm for that test it is possible to arrive at what is called a subject quotient; that is, if the norm for a ninth-year student completing one year of Spanish is 39 in the Iowa Placement Spanish Test (S1) and the pupil's score is 41, he will have a subject quotient of $\frac{41}{39} = 1.05$. If when he was fourteen years old he made a mental age of fifteen years in an intelligence test, his intelligence quotient will be $\frac{15}{14} = 1.07$. By comparison of his subject quotient in Spanish, 1.05, and his intelligence quotient, 1.07, it is evident that he is not working quite up to his capacity, for his achievement quotient divided by his intelligence quotient should equal 1 if he is working to capacity; but here $\frac{1.05}{1.07} = 0.98$. Hence, although he made a score above the average, he is not doing as well as he could and should; and this bit of information is, after all, the most important thing that a teacher can find out about a pupil. The following abbreviations are in common use to express results of tests: M.A. = mental age, expressed in years and months;

C. A. = chronological age, expressed in years and months; $\frac{\text{M. A.}}{\text{C. A.}}$ = I. Q., or intelligence quotient; E. A. = educational age, as determined by a battery of tests in the various subjects which the pupil is pursuing; $\frac{\text{E. A.}}{\text{C. A.}}$ = E. Q., or educational quotient, which is an index of his attainment in comparison with his fellows; $\frac{\text{E. A.}}{\text{M. A.}}$ = A. Q., or achievement (accomplishment) quotient, which is an index of his attainments in comparison with his ability. All these ages and quotients can be expressed graphically on a card, called a psychogram, which tells at a glance all the results from standardized tests and their meaning in relation to the individual pupil.

The mathematics of measurement. *Measures of central tendency.* It is not the purpose of this section on measurement to go into the details of statistical procedure, but only to define the statistical terms encountered in reading educational literature, so as to facilitate understanding of the literature. The commonest statistical terms have to do with central tendency; that is, point out what is likely to be the commonest occurrence in the subject matter or trait that is being measured. *Mode* is that measure that occurs most frequently in a series; it is the fashion, or largest score, in a frequency table. *Mean,* or arithmetical average, is the sum total of the scores divided by the number of scores. The *median* is the middle paper, or score, in a series. These measures of central tendency have two important uses: first, they point out the score that represents all the scores best and so give a concise description of the performance of the group as a whole; secondly, they give a single score, a typical score, which may be used as a basis for comparison. Norms are usually medians that have been determined by investigation of a great number of cases.

Measures of variability. While measures of central tendency are very important for the purpose of comparison of

group with group, the extent of variability within the group is a more important factor in teaching or learning, for these measures determine how much above or below the central tendency any particular individual may stand, or his relative standing in class, or the homogeneity of the grouping. *Range* is the spread of the scores, the total extent of the variability, and is found by subtracting the lowest from the highest score. *Quartile deviation,* or Q, is a term used to describe the range of the middle half of a distribution; that is, if we find the score that represents the twenty-fifth percentile (Q_1) and the score that represents the seventy-fifth percentile (Q_3) and divide by two, we shall get quartile deviation. *Interquartile range* is the spread of the scores between the twenty-fifth and the seventy-fifth percentile scores, sometimes called the *middle 50 per cent. Average deviation,* or A.D. (also called mean deviation, or M.D.), is the average of the deviations of each separate measure in a series from the average (or mean) of the whole series. *Standard deviation,* or S.D., or σ, is the square root of the mean of the squared deviations taken from the average of a distribution.

Measures of relationships. Perhaps the simplest way of expressing results from test scores so that relationships may easily be seen is by means of graphic representation, for this presentation of facts will often catch the eye and hold the attention when the most careful array of statistics will fail to impress the point. The *frequency polygon* is the figure which shows how nearly the distribution approximates the normal curve. Other familiar types of graphic representation are as follows: the *histogram,* or column diagram; the *ogive,* or cumulative frequency graph; the *bar* graph, which represents each group by a bar; the *scatter diagram,* which expresses the relationship of two variables. For most students of education the comparison of results with the normal curve is, in some fashion or other, the most important graphic representation. Particularly does the question of "skewness" of the curve have much significance. Skewness may

result from a small number of cases, special selection, or errors; but if such be not the case, then skewness is indicative of important trends.

Correlation is a method of expressing relationship of one quality, like general intelligence, to another quality, like achievement in Spanish. The notation used to express this relationship is the small letter r and ranges from $+1$ to -1, with zero expressing pure chance. Perfect negative correlation (-1) means that the pupil with the highest intelligence got the lowest score, and so on through the class; perfect positive correlation ($+1$) means that the pupil with the highest intelligence got the highest score, and so on down the scores of the class, each pupil getting a corresponding rank in both intelligence and Spanish.

Correlation may be found by the Pearson product-moment formula, by constructing a scatter diagram and from it a correlation table; or by plotting the regression lines and using regression formulas; or by the rank-difference method; or by the Spearman Footrule. In studying human beings, where so many variables enter into the influence of any given act, it is frequently desirable to keep constant or eliminate some one factor; for instance, we might wish to get rid of the factor of age in studying achievement in Spanish, so as to see how intelligence and achievement in Spanish correlate. This is done by *partial correlation*, which eliminates disturbing factors. *Multiple correlation* is used to find correlation between a single dependent variable and a number of independent variables.

Correlation, as expressed by a ratio, needs to be reinterpreted in terms of adjectives to convey meaning to many people. Roughly we may say that from 1 to 0.80 is high positive correlation; from 0.80 to 0.50 is good correlation; from 0.50 to 0.35 is evident correlation; from 0.35 to 0.20 is low correlation; and from 0.20 to 0 is insignificant correlation. This same series may be carried on to -1 to express the same estimates of negative correlation. Often a correlation score will be written 0.21 ± 0.04, the latter figures

($\pm$ 0.04) standing for the *probable error* of correlation, or indicating that the chances are even that correlation will fall between 0.17 and 0.25; to be reasonably sure that there is some correlation present an obtained r should be at least four times its probable error (P. E.).

Use of the results. *Homogeneous grouping.* It has long been noted that children spontaneously tend to group themselves according to mental age rather than chronological age, — that the bright child tends to play with older children and the dull child with younger children, — and it has become increasingly evident that this is a desirable basis on which to classify pupils for school work. Hence one of the results of the testing movement has been a tendency to supplement classification of pupils on the basis of chronological age or achievement in subject matter by arrangement of the pupils in homogeneous groups according to ability to do the work in hand. In the elementary school the grouping is usually on the basis of intelligence tests; but in the high school the grouping may well be upon the results of achievement tests in subject matter, by which, where there are enough pupils to make several classes, the whole number can be divided into several homogeneous groups by putting the brighter children together, the normal children in another group, and the less-gifted children in a third group. While, of course, this makes the organization and administration of the school more difficult, it makes both teaching and learning easier; and the whole history of public-school education during the last century bears witness to the constant effort of schoolmen to find even better methods of grading and classifying school pupils, for it is axiomatic that the more homogeneous the group the better the possibility that each individual in that group will profit by the instruction. Pupils have long been segregated according to their interests (curricula) and according to their achievement (grade or course); the present practice attempts to segregate them further according to their ability.

German education, as has been noted in another section, provides separate schools for pupils of separate interests; but in the United States in spite of many efforts to establish special-type high schools the comprehensive, or cosmopolitan, high school seems to be the type of school that the American public desires. German education recently has provided separate schools for gifted children, and the United States, which has long had separate schools and classes for abnormally dull children, has recently attempted in several instances schools for especially gifted children; but in the main the divisions according to both interests and ability are made in American secondary education within the one school by grouping children in curricula and in homogeneous groups. For a democracy, where class distinction is highly undesirable and where in adult life one has to rub elbows with every type of person, there is great virtue in not emphasizing artificial distinctions; hence attendance upon a comprehensive high school becomes the unifying influence in American secondary education, and differentiation has to be obtained in some other fashion.

Effect upon teaching. Thus it comes about that there is thrown into the American high school a group of pupils much more widely diversified in interests, ability, and social and economic status than in any other public-school system, yet good education depends upon sorting these pupils into small groups of sufficient homogeneity to teach them as a class. It is for this reason that the development of standardized tests has gone on apace in America, because here is a means for another basis of classification; if classes are grouped according to ability to do the work, methods of teaching can be adapted to the various group differences.

It is evident then that the rate with which the pupils will proceed in the learning-process will be varied according to the nature of the group, — fast, medium, or slow. It is also important to emphasize that teaching must vary in the amount of explanation and demonstration, in more repetition or practice, in more careful checking of processes and

results. It has also been proved that the old adage "Slow but sure wins the race" does not apply in general to the learning-process, for the slow pupils show a lower retentive power (memory span) than the bright pupils; hence teaching has to provide for more frequent reviews and consolidation of gains. Limited pupils need more individual attention, because they lose interest in the work more easily, are hampered by a lack of self-confidence, are more easily confused, and so on; hence patient, methodical procedure is especially necessary. On the other hand, bright pupils have often learned bad habits of work, have tended to become lazy, to "bluff," to lack persistence and patience, and so forth, so that the rate of teaching has to be speeded up to require a greater degree of concentration and application on the part of such pupils.

Besides the effect upon classification of pupils, the results from standardized tests have taught a great deal about the learning-process. For instance, by giving Spanish tests which have four parts (vocabulary, manipulation of forms, grammar, and comprehension) and correlating the achievement of each part with the other parts it may be found that if comprehension or reading of Spanish is the objective of teaching, emphasis on teaching grammar and forms may be of less worth than emphasis on vocabulary; or that the direct method may be productive of greater comprehension than the grammar-translation approach. The actual teaching-process may be varied according to the results found. Tests, by pointing out to teacher and pupil the weak points in achievement, call attention to methods which are not producing results, and furnish objective evidence for the elimination of poor and the adoption of successful methods of teaching and learning.

Effect upon programs. More and more in recent years have secondary-school subjects had to justify by objective standards their places in the curriculum. A period of questioning the worth of secondary-school subjects on the basis of a new

set of criteria, evolved by objective tests or by a new psychology built upon objective studies of human behavior, has caused a revision of the whole program of studies. The development of the technique of pupil-guidance has made many new demands upon the curricula and added new courses and new types of courses.

The new basis for classification of pupils also connotes a corresponding reclassification of courses; for when the pupils are divided into fast, medium, and slow groups, the making of three courses in the place of the one formerly used for the undiversified group becomes necessary. Enrichment and simplification of the old course have been found to be incomplete adaptations for bright and slow pupils respectively; eventually the subject matter must be thoroughly adapted to the ultimate objectives of each group: for the bright pupil, more theoretical and philosophical treatment; for the less gifted, more concrete, applied, and better-illustrated material.

Teachers' marks and promotion. One of the matters that have come under the searchlight of objective testing has been the subject of teachers' marks, which have been shown to be far less reliable than one might wish. It has been shown that small schools mark more easily than large schools; that the ninth-year pupils are marked more harshly, according to their capacity, than those of the upper grades; that some teachers are easy and some subjects hard, when considered from the standpoint of marks; in general, that a given mark does not mean the same thing to different teachers or in different subjects or in different schools. Since marks in the past have represented achievement of a given bit of a uniform curriculum, and have been used as an instrument of selection by which to weed out less-intellectual pupils, this variation undoubtedly has done much injustice. Apparently the cure is the adoption of a uniform five-point scale with some attempt to approximate the normal curve, although to apply the normal curve rigidly to classes of such small numbers as thirty would be another act of injustice.

With the change in the objectives of secondary education, with the inclusion of a clientele which is not college-preparatory, and with the rise of doubts as to the wisdom of making secondary education selective a new standard for marking has arisen. Perhaps all the following seven objectives exist in the present marking system: (1) to stimulate the pupil to greater effort, (2) to measure the pupil in terms of his own ability, (3) to measure the pupil in terms of the group with which he is working, (4) to show achievement in terms of subject matter, (5) to show ability to do the work of the next term, (6) to furnish a criterion in case of transfer to another school, (7) to form a criterion and basis of comparison within the school for the formation of curricula. With the inclusion of "such average pupils as may profit by instruction" promotion in secondary schools must necessarily become based upon ability to profit by more advanced instruction.

DISTRIBUTION OF THE HIGH-SCHOOL POPULATION

Recent changes. *Numbers.* In 1924 there were 19,442 public high schools in the United States, enrolling 3,389,878 school pupils, which is an increase of nearly a third of a million students in two years, according to the reports from high schools to the United States Bureau of Education. One of the interesting increases of the biennial period is the increase in percentages for the several years of the high school: first year, 7.5 per cent; second year, 13.9 per cent; third year, 18.7 per cent; fourth year, 25.3 per cent. These figures indicate that the public high school is holding its pupils better and, especially as the figures 49.3 per cent indicate, that a pupil who enters a four-year high school has one chance in two of graduating; no less than six years ago the chances were only two in five that he would graduate. It is also interesting to note that in 1924 the schools reported 362,236 graduates, of whom 155,698 were boys and 206,538 were girls. Rather less than half these graduates continued their

TABLE XIV. DISTRIBUTION OF PUPILS IN THE SEVERAL

EXCLUDING STATISTICS OF ELEMENTARY

ITEMS	1908	1909	1910	1911	1912
Pupils in first year	333,274	364,138	392,505	421,335	461,288
Per cent of total number	43.3	43.3	42.9	42.8	41.7
Pupils in second year	209,265	226,129	247,936	263,213	299,304
Per cent of total number	27.2	26.9	27.1	26.7	27.1
Pupils in third year	137,526	149,955	163,176	176,990	201,311
Per cent of total number	17.8	17.8	17.8	18.0	18.2
Pupils in fourth year	90,391	101,051	111,444	123,139	143,457
Per cent of total number	11.7	12.0	12.2	12.5	13.0
Four-year schools reporting			6,421	6,732	7,686
Per cent of total number reporting			62.9	65.8	68.5
Teachers in four-year schools					
Men			14,556	16,004	18,756
Women			20,776	22,776	26,724
Total			35,332	38,780	45,480
Pupils in four-year schools					
Boys			348,587	378,946	439,854
Girls			458,247	490,611	557,701
Total			806,834	869,557	997,555
Per cent of number of secondary pupils in all high schools			88.2	88.3	90.3
Survival percentages					
First year	100.0	100.0	100.0	100.0	100.0
Second year		67.9	68.1	67.1	71.0
Third year			49.0	48.6	51.3
Fourth year				36.9	39.4

education, 98,506 going to college and 44,379 going to other institutions, making a total of 142,885 who continued their education. One out of five of the pupils who enter a public high school graduates and continues his education; the type of community — rural, urban, or city — shows little difference in the percentage of pupils sent on for higher education. A great part of the high-school population is enrolled in the academic curriculum, 2,318,363 pupils being so enrolled against 540,975 in the commercial, 155,167 in the technical or manual training, 34,138 in teacher training, 56,469 in agri-

GRADES OF PUBLIC HIGH SCHOOLS, 1908–1924

GRADES IN JUNIOR HIGH SCHOOLS

1913	1914	1915	1916	1918	1920	1922	1924
464,625	497,110	543,026	590,110	654,935	742,320	869,100	934,192
41.0	40.0	40.0	40.5	39.8	40.1	39.1	36.9
305,678	325,960	354,705	391,301	441,868	498,796	607,762	692,558
26.9	26.7	26.7	26.9	26.9	27.0	27.4	27.4
211,352	226,999	245,380	268,762	309,208	346,684	426,633	506,286
18.6	18.6	18.5	18.5	18.8	18.8	19.2	20.0
153,116	168,735	185,873	205,888	239,160	261,369	316,811	396,853
13.5	13.9	14.0	14.1	14.5	14.1	14.3	15.7
7,839	8,275	8,440	8,906	10,638	11,080	11,323	12,021
69.5	71.9	72.3	74.2	76.3	77.3	80.6	81.1
19,589	21,619	23,487	25,749	25,283	29,837	37,187	42,860
28,199	30,872	33,383	36,894	50,021	54,678	64,222	71,597
47,788	52,492	56,870	62,643	75,304	84,515	101,409	114,457
457,694	501,841	561,573	618,851	671,774	791,343	1,004,355	1,156,300
577,246	624,615	674,526	743,663	892,378	989,989	1,156,506	1,319,086
1,034,940	1,126,456	1,236,099	1,362,514	1,564,152	1,781,332	2,160,861	2,475,386
91.2	92.4	93.0	93.6	95.1	95.9	96.9	97.5
100.0	100.0	100.0	100.0	100.0	100.0	100.0	
66.3	70.1	71.4	72.1	71.0	71.4	75.4	
50.2	49.2	52.8	54.1	52.4	52.9	57.5	58.3
39.0	40.1	40.3	44.3	44.0	42.0	45.3	49.3

culture, 159,852 in home economics, and 41,998 in trade and industrial curricula. These figures are confusing, since the terms "curricula" and "courses" are not clearly defined by the United States Commissioner.

A very pertinent question to ask is What proportion of the entire population goes to high school? In 1890 only 3.2 persons in each thousand of the population were enrolled in public high schools; in 1918 there were 15.6, and in 1924 there were 22.6. The average length of the secondary-school terms was 176 days in 1924 against 169 days in 1918. Only

1.2 per cent of the total school population was in the high school in 1890, but in 1924 the reports showed 14 per cent in the last four years of secondary education.

The distribution of this army of adolescents on various bases presents some interesting facts. Consistently over a long period of years the number of girls has exceeded the number of boys, approximately 55 per cent being girls, the remaining 45 per cent boys. In this connection it should be noted, first, that more girls than boys enter high schools; secondly, that more girls than boys are found year for year throughout the high-school period; and thirdly, that more girls than boys graduate from the public high school. The ratio of girls to boys among the graduates is about as 6 to 4.

If this public-high-school population is distributed through the four years of the traditional high-school period, the proportion of the total enrollment found in each year will approximate the following percentages: in the first year, 37 per cent of the total; in the second year, 27 per cent; in the third year, 20 per cent; and in the fourth year, 16 per cent.

TABLE XV. REVIEW OF STATISTICS OF PUBLIC HIGH SCHOOLS, 1890–1924

EXCLUDING STATISTICS OF ELEMENTARY GRADES IN JUNIOR HIGH SCHOOLS

ITEMS	1890	1900	1910	1920	1924
Schools reporting	2,526	6,005	10,213	14,326	14,827
Per cent reporting (based on all secondary schools reporting)	60.8	75.2	85.2	87.3	87.5
Teachers					
Men	3,597	10,172	18,890	34,396	48,359
Women	5,280	10,200	22,777	63,258	85,036
Total	9,120	20,372	41,677	97,654	133,395
Students					
Boys	85,451	216,207	398,295	822,967	1,183,067
Girls	116,351	303,044	516,536	1,034,188	1,355,314
Total	202,963	519,251	915,061	1,857,155	2,538,381

TABLE XV. (CONTINUED)

ITEMS	1890	1900	1910	1920	1924
Total population . .	62,622,250	75,997,687	91,972,266	105,710,620	112,078,611
Per cent of total population in public high schools . .	0.32	0.68	1	1.76	2.26
Per cent of all secondary students enrolled in public high schools . .	56.7	74.6	82.3	88.2	90.7
Per cent of all public and private secondary students enrolled in public high schools . .	68.1	82.4	88.6	91	92.1
Colored students included above					
Boys	2,512	2,655	4,306	9,497	18,898
Girls	3,397	5,740	8,330	18,134	32,847
Total	5,935	8,395	12,636	27,631	51,745
Graduates					
Boys	7,692	22,575	43,657	90,516	155,698
Girls	14,190	39,162	67,706	140,386	206,538
Total	21,822	61,737	111,363	230,902	362,236
Military drill					
Schools offering .				688	300
Students taking .		10,455		98,831	55,964
Libraries					
Schools reporting .		4,899	8,969		14,004
Volumes	956,832	2,727,003	5,032,814		11,853,669
Average volumes to a school		557	561		846
Buildings and grounds					
Schools reporting .		4,472	8,481		14,045
Value	$49,171,542	$96,131,695	$217,893,714		$1,323,460,137
Average value . .		$20,272	$25,692		$94,230
Scientific apparatus, furniture, etc.					
Schools reporting .			7,888		13,883
Value			$13,435,789		$120,927,154
Average value . .			$1,703		$8,710
Amount spent for new buildings, grounds, and improvements					
Schools reporting .			2,596		6,266
Amount			19,366,049		163,198,430
Teachers to a school .	3.6	3.4	4.1	6.8	9
Students to a school .	80.4	86.5	89.6	139.5	199
Students to a teacher	22.3	25.5	22	20.5	22.1
High schools for boys only			34	39	52
High schools for girls only			26	37	50

The corresponding figures for 1910 were as follows: first year, 42.9 per cent; second year, 27 per cent; third year, 17.8 per cent; and fourth year, 12.2 per cent.

A different way to express this same distribution of high-school students is as follows: out of each thousand students who enter the high school 784 will reach the second year, 583 the third year, 493 the fourth year, and 436 will graduate. The reorganized plan has not been sufficiently well established yet throughout the United States as a whole to make any detailed statistical statement concerning it. A few interesting facts about it are given in the Report of the United States Commissioner of Education:

	1918	1924
Number of junior high schools reporting	557	688
Number of students in the first year of the junior high school (seventh grade)	48,831	133,726
Number of students in the first year of the junior high school (eighth grade)	41,617	131,410
Number of students in the first year of the junior high school	25,749	106,979

To these totals must be added 286 junior high schools (enrolling 9617 pupils) for colored pupils, as well as the following items from the junior-senior high schools:

	1924
Number of junior-senior high schools reporting	1,273
Number of students in first year (seventh grade)	68,078
Number of students in second year (eighth grade)	66,153
Number of students in third year (ninth grade)	78,598
Number of students in fourth year (tenth grade)	63,390
Number of students in fifth year (eleventh grade)	45,495
Number of students in sixth year (twelfth grade)	36,240

Perhaps the most significant fact in this connection is that the gap between the eighth and ninth years is really being closed. Though the articulation is evidently not yet completed, yet the enrollment in the senior high school has increased from 5.1 per cent of the total in 1910 to 12.3 per cent of the total in 1922, and shows a remarkably accelerated growth, especially in the larger cities where junior high schools have been more generally established.

The corresponding figures for the three-year senior high schools (1924) are given below:

	1918	1924
Number of senior high schools reporting	315	179
Number of pupils in the first year (tenth grade)	18,095	57,140
Number of pupils in the second year (eleventh grade)	12,392	39,843
Number of pupils in the third year (twelfth grade)	10,856	33,155
Total enrollment in three-year senior high schools	41,343	130,138

The distribution on a sex basis is as follows:

	Boys *Per cent*	Girls *Per cent*
Junior high school		
Seventh grade	48	52
Eighth grade	47	53
Ninth grade	45	55
Senior high school		
Tenth grade	42	58
Eleventh grade	41	59
Twelfth grade	40	60

In spite of the fact that girls outnumber boys 6 to 4 at the end of the high-school period this is a distinctly better situation than obtained in 1890, and the ratio has been becoming more evenly balanced throughout the last thirty-five years; hence we are safe in saying that the heavy elimination of boys during the early years of the high-school period is gradually being checked.

During the last thirty-five years, on an average, each day has witnessed the establishment of a new public high school; each year has seen the addition of one hundred thousand pupils to the last four years of our democratic public-school system (and since 1920 nearly twice that number, or nearly two hundred thousand, every year); each year has witnessed an increase in the percentage of pupils attending high schools until in California in 1924 there were 34 out of every thousand of the total population attending these four grades; each year has witnessed an increase in expenditures, although since 1915 the actual purchasing power of school revenue has slightly decreased per pupil-average, until the expenditure per pupil in 1922 was $84.49 against an average of $30.09 for an

elementary-school pupil. Although the statistics for private schools are somewhat unreliable, there have apparently been no such increases; in fact, compared with the total population there has been a progressive decrease, for the total attendance on private secondary schools has remained nearly stationary during the time that the total population has doubled. As the training and pay of teachers in private schools do not differ materially from the training and pay of teachers in the public schools, nor does the size of classes differ materially, nor the expenditure on buildings or equipment, it seems evident that the private secondary school is depending largely upon religious or social factors for attraction and that these factors have been of less importance than formerly in determining where the pupil shall attend school.

At times people have questioned whether the nation could bear the burden of such expensive training; but when one considers that it cost less than fifty cents a day (less than eight cents an hour) for each pupil in the high school, that the total expenditure for all public schools (both elementary and secondary) was only one and a half billion out of a national income of sixty-five billion dollars, that one city (New York) spent more on theater tickets during 1924 than was spent on instruction in all the public schools in the United States, that motion pictures cost more than public schools, that we spent five times as much on automobiles as we did on public-school education, there can be no question as to the ability of the nation's purse to stand the strain.

Purpose. Colvin found that only about 27 per cent of the senior pupils attending thirty-four Massachusetts high schools are good college risks, although a considerably greater number intend to go to college. About one tenth, mostly girls, intend to go to normal schools, nearly an equal number intend to go to business schools, and a like number intend to go to technical schools. The remainder, rather more than a third, do not intend to continue their education, and this portion of the high-school population apparently is on the

increase. Looking at the matter from the beginning of the enrollment period instead of from the end, we find that about one half of the pupils signify their intention of going to college, although only one fifth will ever actually enter college. Only about one tenth are good college risks. Hence it is surely inappropriate to consider the high school as essentially a college-preparatory school. The half of the high-school population that is not going to graduate is entitled to equal opportunity for continued education, although the divergence of aim makes a difficult problem for the school.

Social status. It is inevitable that with the number and size of high schools increasing so rapidly the various social and economic strata represented in our general population should become more generally represented in our high schools. Instead of being homogeneous, as in the days of the Latin school, our high-school population is very heterogeneous now and approximates a cross section of our population, with, however, certain very definite limitations. The following quotations are chosen from the study of Counts, entitled *The Selective Character of American Secondary Education*; this is a rather intensive study of high schools in Seattle, Washington; Bridgeport, Connecticut; Mt. Vernon, New York; and St. Louis, Missouri.

> High school students, even today and in spite of the amazing growth of the high school enrollment since 1880, are a highly selected group. . . . Secondary education is not education for adolescence, as elementary education is education for childhood, but rather education for a selected group of adolescents. . . . There is a close relation between parental occupation and the privileges of secondary education. If we examine the entire high school population, we find certain occupational groups very well and others very poorly represented, in proportion to their numbers in the general population. Among the former are the five great non-labor groups with professional service occupying the most advantageous position, followed by the proprietors, commercial service, managerial service, and clerical service. At the other end of the series are the lower grades of labor with common labor almost unrepresented and personal service, miners, lumber-

workers, and fishermen, and miscellaneous trades and machine operatives in the manufacturing and mechanical industries, occupying somewhat better positions in the order named. The other occupational groups are found between these two extremes. Next to the non-labor groups are the printing trades and the public service, followed by the machine trades, transportation service, and the building trades. In general, the order here given reflects the social and economic status of the occupation, its educational and intellectual standards, and the stability of employment.

Not only do these various occupational classes exhibit different degrees of representation in the high school at the beginning of the course, but those very groups that are under-represented in the Freshman year have the smallest ratio of Seniors to Freshmen. In fact, the representation of an occupation in the first year of the high school is at the same time a fairly accurate measure of its tendency to persist through the fourth year. Consequently, the differences among the groups become more and more pronounced in the successive years of the school. The student population gradually becomes more and more homogeneous as the source from which it is drawn becomes more narrow, until by the time the Senior year of the high school is reached, the student body exhibits a distinctly class character. Here the representatives of the laboring classes are few indeed in proportion to their number in the general population, and the lower grades of labor have practically disappeared. . . .

These differences in the extent of educational opportunity are further accentuated through the choice of curricula. As a rule, those groups which are poorly represented in the high school patronize the more narrow and practical curricula, the curricula which stand as terminal points in the educational system and which prepare for wage-earning. And the poorer their representation in high school, the greater is the probability that they will enter these curricula. The one and two year vocational courses, wherever offered, draw their registration particularly from the ranks of labor. This tendency is considerably more pronounced among the girls than among the boys. The former seem to be peculiarly bound by the social class from which they come. One is surprised at the unmistakable class character of the girls' college preparatory course in a high school such as that in Bridgeport. Furthermore, the thesis may be cautiously advanced that these differences appear somewhat more clearly in the East than

in the West, but it is hardly safe to generalize on the basis of returns from four cities.

A study of expectations following graduation, as given by the students, indicates that this selective principle continues to operate beyond the period of secondary education. Those classes which are least well represented in the last year of the high school will apparently be yet less well represented in the colleges and universities. And, as in the case of the choice of curricula, this tendency is more marked among the girls than among the boys, in the East than in the West. . . .

All the evidence brought to light in this study points to the importance of the family as a powerful factor in determining attendance at high school. The mortality of parents of high school students is found to be considerably below the expectation for children of high school age, and does not increase perceptibly from the Freshman to the Senior year. In fact, according to the returns from Mt. Vernon, the mortality of parents is appreciably higher among sixth-grade children than among students in the last year of the high school. An examination of the various groups of children of high school age not in high school shows a much higher mortality of parents here than among high school students. In the case of young people attending the evening high school in Bridgeport, the mortality of parents is extraordinarily high, more than two and one-half times as high as among those attending the day high school. Unquestionably the disorganization of the home through the death of a parent is reflected in the diminution of the opportunities of secondary education.

While the evidence is neither quite so clear nor quite so objective, apparently the engaging in remunerative employment on the part of the mother acts in the same way as the death of a parent. Comparisons made among the groups studied usually hold in the one case as in the other. Yet, it must not be forgotten that the working mother is usually just one element in a complex social situation.

The influence of the size of the family on educational opportunity is not altogether clear. On the average, those elements in the population who do not patronize the high school have larger families than those who do, but there is no evidence to indicate that the size of the family itself is a determining factor; for the number of brothers and sisters is no smaller among Seniors than among Freshmen, and the very large families have

just as high representation in the last as in the first year of the high school. Likewise the very small families do not apparently increase their representation in the latter years of the high school.

The order of birth seems to be a matter of more importance, although the complexity of the situation is hardly compatible with any but the most cautious of statements. Our clearest evidence, drawn from the four groups studied in Bridgeport, indicates that the first born has somewhat more limited chances of securing a high school education than the last born child. It is on him particularly that the burden of family support is likely to fall, if one or more of the children must help to bear it.

Not only is the high school population selected sociologically, but it is selected psychologically as well. Children of high school age not in high school, whether they be in the evening high school, the trade school, or the continuation classes, show a lower intelligence rating on the average than do those in high school. But there is much overlapping in the distribution of ability for the two groups. There is much excellence out of, as well as much mediocrity in, the high school. The trade school population shows a particularly wide distribution of ability.

In the high school itself the traditional academic curricula draw a higher type of ability, on the average, than do the newer and vocational curricula. Here also, however, the overlapping of the distributions is pronounced, and perhaps even more significant than the average difference.

The children from the laboring classes exhibit ability of practically as high grade as do those from the other occupational groups. This is probably due to the much greater elimination of children of labor parentage. Likewise the children of immigrants do about as well on the tests as do the children of native stock.

First born make records somewhat superior to the records of last born children. This is probably to be explained in terms of greater elimination and thus more rigid selection among the former. The intelligence score also varies inversely with the size of the family. The explanation here is apparently to be found in the limitation of births among the more foresighted elements in the population. . . .

Little need be said in conclusion. The story that has been told in the foregoing pages is not a new one. Misfortune, as well as fortune, passes from generation to generation. The children of unfortunate parentage are unfortunate, assuming here that the current secondary education is worth to the individual some frac-

tion of its cost. The ancient adage, "To them that hath shall be given," is true today as in olden times. When not preserved through the operation of biological forces, the inequalities among individuals and classes are still perpetuated to a considerable degree in the social inheritance. While the establishment of the free public high school marked an extraordinary educational advance, it did not by any means equalize educational opportunity; for the cost of tuition is not the entire cost of education, or even the larger part of it. Education means leisure, and leisure is an expensive luxury. In most cases today this leisure must be guaranteed the individual by the family. Thus secondary education remains largely a matter for family initiative and concern, and reflects the inequalities of family means and ambition.[1]

Counts's study has been contradicted in some particulars, for it is very evident that the selection, dealing only with cities, neglects the rural population. Studies made in Wisconsin, in Massachusetts, in Indiana, and in Canada all tend to show that a far higher percentage of pupils is drawn from the labor and agricultural groups, and it is evident that the steady increase in high-school population must be increasingly drawn from such sources.

Although the economic status of the parents of high-school pupils has been treated incidentally in the preceding section, it needs to be added that in two different studies with different groups it has been found that nearly half the seniors in high school have fathers whose annual incomes are between $1000 and $2000; indeed, 87 per cent of such incomes in Indiana and 81 per cent in Massachusetts were $3000 or below, so that selection on the basis of family income is less marked than formerly. Two other studies made before the World War point to contradictory conclusions as to the influence of family income upon the persistence of the pupil in school. No doubt the more favorable position of labor since the war has made possible the entrance of many youths from the homes of skilled and semiskilled laborers, and the

[1] G. S. Counts, *The Selective Character of American Secondary Education*, pp. 141 ff.

present widespread belief in the efficacy of secondary education has induced such youth to enter high school, while the broadening of the curricula and objectives of the school has tended to keep them there. Low economic status of the parent is still an obstacle to secondary education for the adolescent youth; but it is doubtful if it is the principal determinant, as is the case in many foreign countries.

Racial characteristics. It is probably true that in inherited intelligence there is comparatively little to choose between the civilized races and that barbaric races are becoming extinct or civilized, yet racial social inheritance is one of the most divergent characteristics of our American populace. In attitude, customs, and ideals, as well as in social and racial groups, the Anglo-Saxon homogeneity, so evident in the American high school and academy before 1890, has been rapidly disappearing. One has but to read through the names on the class rolls in the cosmopolitan city high school to have driven home the fact that the high-school population of today represents a more polyglot population than was ever before gathered together in a secondary school. To just what extent it is desirable or possible to make this group cleave to the Anglo-Saxon tradition in ideals and attitudes is not as yet clear; certainly the name "cosmopolitan" implies that the high school should retain, if not cultivate, the most desirable characteristics of all races, although little effort has been made to make the program of studies assume a cosmopolitan character, except to adapt the individual school to the locality in which it is situated. With the increase in divergence of racial heredity the problem of integration and the teaching of American ideals becomes of greatly increased importance.

The following quotation from Counts's study, referred to previously, is to the point:

> Returns from Bridgeport and Mt. Vernon indicate very clearly that children of native parentage attend the public high school in proportionately much larger numbers than do children of

immigrant parentage. There are certain immigrant groups, however, that approximate, if they do not surpass, the native stock in their zeal for secondary education, altogether apart from the social and economic handicaps under which the immigrant labors. Among these, probably the Russian Jews stand at the top, followed by the Irish, the Germans, and the peoples of the British Empire. At the other extreme are the Italians, the Poles, and the races of the old Austro-Hungarian Empire who patronize the high school in exceedingly small measure. Disregarding the record of the Russian Jews, it may be stated as a general principle that the farther east and south we go in Europe, as the source of our immigrants, we find less interest in secondary education.

The well known tendency among our own people for the girls to patronize the high schools in greater numbers than the boys is reversed among certain immigrant stocks. Thus, while in Bridgeport High School there are but 74 boys of native parentage to every 100 girls, among the Italians this ratio of boys to girls is 154. This social trait, if such it may be called, varies much from group to group. Beginning with the Irish who exhibit the American trait in approximately its native strength of sending girls rather than boys to high school, the proportion of boys steadily increases as we pass east and south into Europe. Among the peoples of the "new" immigration the right of the girl to a secondary education is not recognized as on a parity with that of the boy.

In choice of curricula the girls of immigrant stock are clearly less inclined towards the preparatory course than are girls of native parentage. Curiously enough the reverse is true of the boys, but, since the boys of American parentage are exceptionally well represented in the scientific course, which is in reality a college preparatory course, no large significance should be attached to this difference between foreign and native stock.[1]

Colvin found that in Massachusetts nineteen seniors out of twenty were born in the United States and led in psychological scores. Nearly half the seniors have parents both of whom were born in the United States, and about one third mention some other country as the birthplace of both parents. Seniors making the highest scores were those both of whose parents were born in English-speaking countries.

[1] G. S. Counts, *The Selective Character of American Secondary Education*, pp. 145–146.

It is interesting to note that there has been a great increase in the facilities for secondary education for colored pupils; many of the Southern states, after a long period of neglect, are now providing increased funds for such purposes, although in separate school systems, while in the Northern states, perhaps owing to the northern migration of the colored people, there is a steady increase of colored pupils in secondary education. Out of the 286 junior high schools reporting 9617 colored pupils, 16 such schools were for colored pupils only; of the 247 junior-senior high schools reporting 9673 colored pupils, 43 were for colored pupils only; out of the 84 three-year senior high schools reporting 1870 colored pupils, 2 were for colored pupils only: altogether there are 271 public secondary schools for colored pupils only, employing 1698 teachers and enrolling 54,405 pupils. This is an increase of 45 per cent in the two years from 1922 to 1924.

Intelligence. That intelligence is a large factor in success in school work no one doubts, but numerous attempts to measure results have demonstrated that it is not the sole factor. It may be said that of the pupils scoring in the highest fifth of intelligence tests, three quarters will do good or superior work and only one tenth poor work; on the other hand, of the group scoring in the lowest fifth, two thirds will do poor work and only one third good or superior work. The correlation coefficient ($r = 0.441$) between school marks and intelligence tests has been found to be rather constant over a period of years. Intelligence has been found to vary inversely as age among high-school students (the older the pupil the lower his intelligence score); this is of course due to retardation of the duller pupils, for nearly one half the pupils entering the ninth year have been retarded a half-year or more. The more intelligent students choose the more academic subjects; comparing the highest percentile with the lowest percentile of intelligence, we find that the curricula chosen by the higher percentile are the classical, academic, college-preparatory, scientific, while the curricula

chosen by the lower percentile are the general, vocational, normal, and commercial. In subjects chosen in school, and in life careers chosen by high-school pupils, a realization of intellectual limitations enters into and colors all choices. Intelligence shows no marked correlation with the occupation pursued by the father of the pupil; in fact, the psychological medians for the various groups are so very close, and the individual scores overlap to such a great extent, that one is justified in saying that occupation of the father is a very poor index of the intelligence of the pupil. Intelligence correlates rather closely with family income; but again the differences between the groups are very small, while the overlapping of individual scores is very great. Perhaps owing to the linguistic nature of intelligence tests, nationality seems to be a greater factor in intelligence variation than either social or economic status.

Elimination. There has been a steady increase in the drawing power of the high school and also in its ability to retain pupils until graduation, as is demonstrated by the figures quoted above from the reports to the United States Bureau of Education. The causes of elimination of pupils may be grouped into three classes: ill health, home conditions, and mental inequalities.

A study of the two million young men drafted into the army in 1917 showed that nearly one quarter were suffering from minor ailments which impaired their efficiency; and numerous school surveys since that date have demonstrated that fully as large a portion of our secondary population is in a similar predicament, and this in spite of the fact that mortality statistics show the period of adolescence to be the period of life which is most free from serious disease. Nearly 60 per cent of the pupils retarded are found to be suffering from defective eyesight or hearing or defective tonsils or adenoids, and the New York survey found the rural pupils in a worse condition than city pupils. Nearly all these health conditions could be remedied by better medical in-

spection, more free clinics, and extension of the health supervisory service. A series of pamphlets, published by the American Society for the Study of Mental Hygiene, produce much evidence that nervous diseases of adolescent youth are easily preventable. Ill health, in itself alone, is not the greatest cause of elimination, although because it impairs physical and mental efficiency it is a contributing cause.

Social and economic status of the parent is steadily becoming a less pertinent factor in elimination. A study of the causes of elimination of secondary pupils in Boston during the year 1924–1925 showed that "dislike of school studies" accounted for over half the drop-outs and that economic necessity was the sole cause in only 17 per cent of the cases. However, there is a broad "halo" of cases where desires to earn money, — for economic independence, — coupled with failure in school or dislike of school subjects or school teachers, is the important cause of elimination from school. Among certain races, especially south-European and east-European races, traditions of secondary education are not well developed, and attendance upon the high school is considered an unnecessary luxury, especially for the first generation of children born in this country.

The great cause of elimination from school, both at the end of the compulsory-attendance age and during the period of secondary education, is the lack of mental adjustment to high-school education. Boys, particularly during the early and middle years of secondary education, are a year or two behind girls in psychological development, and teachers eliminate many boys by applying the same standard of marking to both sexes; the gradual but steady increase in the percentage of girls throughout secondary education is in no small measure due to this cause. For most pupils the junior-high-school period is one of exploration in vocational interests, and the senior period one of vocational preparation; but where the high school does not offer sufficiently broad fields to give the pupil the exploration or training desired,

there is a strong tendency to drop out. There is a high correlation between failure in school subjects and elimination from school; only about 10 per cent of the pupils who drop out have never failed in a school subject, while nearly 40 per cent of those who graduate have completed the four to six years of secondary education without failure in a single school subject. Pupils with an I.Q. of 80 seldom enter secondary education, and those with an I.Q. of 90 are usually retarded one or more grades, the average I.Q. for the four-year high school being in the neighborhood of 105 and each higher class showing a greater selection on the basis of intelligence. California and Kansas enroll in the secondary school nearly one half of their children between the ages of fourteen and eighteen; but the average for the United States is less than a third, while it is evident that this third is drawn largely from the upper percentiles of intelligence, and further increases in attendance must be drawn from correspondingly lower percentiles of intelligence.

Effect of these changes. One cannot but be impressed by the recent changes in the distribution of the high school in terms of social and economic status, racial characteristics, and intelligence, nor fail to be impressed by the fact that these changes are not yet at the peak of intensity. Consequently one may say that, great as have been the changes of the last ten years in these matters, greater changes yet may be looked for in the near future. The reorganization of secondary education on a basis of six rather than four years has only partially taken place; the revision of the program of studies to fit the needs of the newcomers has been barely begun; the adoption of new methods of teaching to fit new objectives and new types of students is still in the theoretical stage; organization, curricula, promotion, and classification all connote a homogeneous, college-preparatory high school, while in fact we are rapidly attaining a very heterogeneous vocational-training school in which the college-preparatory group represents but one fifth of the total popu-

lation. Special-type high schools having been rejected by the pupils, it is apparent that all this heterogeneous group is to be gathered under one roof and that the necessary differentiation required by so many diverse objectives is to be obtained by variety and breadth of the educational offering and by flexibility of methods of teaching, of promotion, and of classification. With the aid of standardized tests skillful teachers must be able to individualize instruction, for a continuation of mass or class methods of instruction with a group of pupils less well selected will mean a lowering of standards unless some measures are adopted to counteract such influence. The extension of the opportunity for secondary education to many more pupils has raised the burden of taxation upon the local community until public-school education now takes from one third to one half all the local funds raised, thus putting the burden of support for education upon the relatively unproductive local property tax while many more productive forms of taxation escape a fair share of this burden. Thus the recent changes in the nature of the high-school population presage far-reaching adjustments both within and without the school. It is too early yet to do more than speculate as to the form and directions which such adjustments will take.

PHYSICAL NATURE OF HIGH-SCHOOL STUDENTS

The factor of heredity. Considered from the point of view of biology, the high-school student is an immature but rapidly maturing animal subject to certain laws and forces of nature as they apply to animal life existing on a high plane. This human animal, biologically speaking, is the product of two forces: heredity and environment, or nature and nurture. The high-school student is what he is because of the interaction of all that the race has been and of all that the race has done both individually and collectively up to the particular instant at which we view the product in the person of the student we have in mind. Which is the basic influence is a point of

controversy and does not concern us here. Neither can it be determined with the slightest degree of certainty or accuracy which of these forces is more influential. All we can say is that the individual as we observe him is the product. There are certain statements which can be made as to the nature of these forces and their effect upon the individual.

In the first place, heredity in terms of chromosomes, electrons, physical form, and intellect sets bounds. The possibilities, the potentialities, of an individual are determined by inheritance. To be concrete: whether a given individual shall have the *capacity* of a delicate touch which would make it possible for that individual to be trained as a very skillful surgeon is a thing which heredity will determine. How extensive potentialities an individual may have is likewise conditioned by his heredity, as are the limits to extension and expansion of these potentialities.

The other factor, environment, is no less a determinant, for it too determines the extent to which the possibilities shall be realized. It is environment which makes possible the training of that delicate touch so necessary for a surgeon; even more, it may determine whether that delicate touch shall be trained to the work of a surgeon or to the work of a highly skillful artist or to the work of a clever burglar. The environment makes possible or impossible the realization of the potentialities and gives direction to that realization. Environment may bring out or suppress the potentiality but cannot supply it, for capacity is contributed by heredity.

The problem of individual differences from the point of view of biology is both important and interesting. The following selection of quotations is taken from a popular lecture by Dr. H. S. Jennings, of Johns Hopkins University, and published with lectures of several other prominent students of educational problems under the title of *Suggestions of Modern Science concerning Education*:

> The most extraordinary thing that we discover about them (children) is the astounding diversity in their fundamental make-

up; the amazing variety of the type that nature has put into the collection. No two look alike, nor like any specimens in any other collection of children. It is only in the past few years that we have come to know, as a part of organized science, that this is no mere matter of superficial appearance; the diversity is in their very foundations; in their original constitution; in the very fiber of their being. It lies as much in their capabilities and tendencies, in their mentality and character, as it does in their physical features. The fact that perhaps strikes most the student of heredity is the astonishing pains that nature has taken to produce variety of type, and nowhere is this so striking as in human children. This is no mere speculative opinion; it is a fact, a material fact, which forms a part of physiology, and can be studied just as can the digestion of food or the circulation of the blood. . . .

Now of late men have gotten hold of the physical aspect of heredity; the inner physical basis for diversity and for resemblance between organisms. We find that there is a visible physical apparatus in which a great number of minute particles present the physical aspects of the qualities which human beings show. We discover that as these particles are shifted and sorted, so in exactly the same way are the qualities of the organisms — the later physical and mental qualities of the individual — shifted and sorted. We do not yet know all the details of the relations between the two sets of things — but we do know *that.*

Now, we find when we study these things that nature has worked out a most ingenious and efficient device for getting all the diversities possible between children; for so shifting and assorting the characters that no two individuals will get the same set. Looking at the physical aspects — the material particles which correspond to the qualities of the individual — we find that the device is something as follows: All the characters — the particles — possessed by any person are arranged in a set of small loop-like strings, 24 in number. These 24 strings are readily visible; they look like tiny strings of beads. When a new individual is to be produced, these 24 strings — each representing a diverse set of characteristics — separate into two groups of 12 strings each; one of these two sets of 12 goes into the new individual. This division into two sets takes place in such a way that a different set of 12, a different combination, is given to practically every different new individual. This set of 12 from one parent is then united with another set of 12, forming another

combination, coming from the other parent. No two of these unions unite the same two sets of characteristics. A more efficient device for preventing the occurrence of two individuals alike in fundamental nature could hardly be imagined. All the steps in the process are visible and can be studied in detail: we can apply arithmetic to the matter and figure out at least the minimum number of diverse combinations that may be produced by any two parents. In man, with the 24 diverse sets of characters, any single individual may produce 4096 different combinations of characters; and the number producible by two given parents runs up to more than 500,000. Any of these combinations is equally likely to appear; that is, children of any of these thousands of different characteristics might be born to a given pair of parents. But as of course only half a dozen or so are actually realized, there is no chance for two alike, and no one in the world can predict the nature of the few children that come into existence. . . .

Men of science are very naturally so inclined to emphasize what we *know* and what we can predict as a result of our scientific knowledge, that they sometimes forget to emphasize important things that we do *not* know and can *not* predict. And one of the positive results of science — one of the results that is permanent — is that it is not possible to predict the combination of characteristics that will be produced by any two parents. Some single points you can indeed predict if you know the parents and grandparents sufficiently well, a few things like color of eyes and hair, — but the combination of characters — even of the physical ones — cannot be predicted; and as for the mental characters, which depend on the interaction of many factors, — prediction of these is quite out of the question, save as a matter of general probability. To be able to know beforehand from the characteristics of the parents what will be the characteristics of the offspring has long been one of the dreams of science; but, to paraphrase the words of the poet, "now we know that we never can know" how to do that, in man, — for the characteristics of the parent do not determine what combination of characters shall appear in the offspring. . . .

There is no one on earth that can predict what combination of qualities will come from the union of any two normal individuals, and there never will be. "Who toiled a slave may come anew a prince" in the next generation, — by the working out of recom-

binations in heredity. However unworthy we may feel ourselves to be, we can always hope for our children — with hopes based upon the knowledge that science gives. Knowledge of these open possibilities must inspire our efforts to help our children unfold what is in them; and must lend an interest to their progress that any false belief in a set and iron law of inheritance would crush out. The literally inexhaustible variety of possibilities offered by nature realizes for practical purposes the ideal of freedom of the will; realizes in effect the dream that there are unlimited possibilities for any individual.

Looked at from the obverse, this knowledge is equally important. Superior parents have no guarantee that their children will be superior. No one can predict the qualities that will arise from *their* combination, for millions of possibilities are equally open. Superior parents must watch and help their children with the same anxious care that others must use.

Of course we know that gifted parents are much more likely to produce gifted children, — inferior parents inferior children. But it is a matter of averages when large numbers of cases are considered. No parent has a "sure thing" in his children, either for good or ill; all may hope and all must fear.

Nature then has expended all her ingenuity in making our little flock of children as diverse as she possibly can; in concealing within it unlimited possibilities which no one can define or predict. It sometimes seems as if we their parents in our process of educating them were attempting to root out all these diversities, to reduce our flock to a uniform mass. Now, there are several things to be said as to this. First, you can't do it, unless your procedure is so radical as to reduce them all to mere stupidity or lifelessness. Second, the only way that appreciable progress can be made in the attempt is by cutting off, stunting, preventing the development of the special and distinctive qualities of the individuals. Unfortunately, this can be done to a certain extent, but only by a process which may rightly be compared with the taking of human life. But why should we desire to do this? Is it not variety of powers and character that the world needs? Does not society become steadily more and more diversified, needing in every nook men of special powers? Is not a world of variety intensely more interesting, more worth living in, than a world of monotonous uniformity? Is it not the variety of human beings that makes life entertaining? Or to put the mat-

ter from the point of view of the individual — how will your son become successful and happy — by being just like all the other sheep in the flock, — or by developing capabilities that others have not? You can be certain that he starts with a combination of qualities that no one else has; shall he not have the advantage of developing these for all they are worth?

I believe that all the world would answer this question, Yes! and yet the world has developed a system of education which, until recently, and to a considerable degree yet, tends to the suppression of individuality. How did this contradiction arise? Its source I believe is not wrong ideals nor mere perversity, but, as in most cases of wrong action, a misunderstanding of the facts. Our schools, like much else in society, have been based on a false idea of the meaning of democracy; on the theory that democracy means that all human beings are essentially alike. Hence a single impersonal method of treatment was considered possible for all cases. And until lately science could not speak the positive word necessary to place that theory with the theory that the earth is flat. But the time has come when biological science can assert positively that all individuals are diverse in their underlying constitution; and can give the detailed specifications on which that assertion is based. Any system, be it of education or of medicine or of politics, that does not recognize this fundamental fact must go into the discard. Democracy, correctly understood as the freedom of each individual to develop the peculiar capabilities that are in him, is precisely what education requires.[1]

There is one other biological factor which needs to be presented. It is now generally accepted that acquired characteristics are not transmissible. If this is true, what is the use of educating the youth of the race? It will have to be done all over again for each succeeding generation! It would seem that the reasonable answer is to be found in the improved living conditions for the race which have come about as a result of educational procedure. By the constant struggle of man to work out the problem of the two-way adjustment (man to environment and environment to man) the race today dwells on a higher plane with greater comforts and

[1] H. S. Jennings and Others, *Suggestions of Modern Science concerning Education*, pp. 8–17.

luxuries than ever before in history. This would seem to be a sufficient motive for a continuation of the educative process. Man may not be able to transmit knowledge through the medium of his physical or mental organism, but he can continue to store up in mechanical ways through various means the facts about his world which he gains by experience, and thus transmit his experience to his posterity.

The factor of environment. Now, what does all this mean for education? It means, first, that since heredity is the preserver of all that has been, education must be thought of as a race process. We cannot influence greatly a single generation through the process of education, but in a cumulative manner over a long period of years it becomes increasingly possible to improve environment, and to make adjustment between the *race* and its environment easier and more favorable to the organism. We cannot by education create, but we can and must develop through modification and improvement of environment. Environment should exert a steady pressure upon the individual and demand the best that he is able to live up to; hence education is largely concerned with creating the best possible environment that will stimulate and "stretch" the native capacities of the individual.

Hence we come to look upon schools as the environment, the medium into which the individual is injected; and upon good schools or good environment as those conditions which provide the maximum possibility for individual development, as those conditions which stimulate, enrich, and develop rather than train the individual to conform to a static ideal. Particularly is this true of secondary education, where adolescent youth are exploring the physical and the mental world, as well as coming to a realization of their own capacities, interests, and needs, and effecting an adaptation between these two variables for the determination of life careers. Variety and breadth are essential characteristics of the secondary-school environment, and democracy demands that the environment be such that each individual shall have

equal opportunity to develop his native capacities, that the gifted pupil be not handicapped or the dull pupil eliminated.

The factor of growth. Just as "full many a flower is born to blush unseen," so are many geniuses among our population born into unfavorable environment; with their native capacities handicapped by a poor start, unsympathetic home environment, straitened circumstances, and all the other factors which condition progress, they are brought into a realization of their early promise only through the instrumentality of free secondary education or happy chance in the vocational world. Every youth is subject to the law of growth and development. While the capacity to grow is inherited and the extent and direction of growth are determined by environment, growth proceeds only according to natural law, according to well-defined modes of procedure, the rules of which biology, psychology, sociology, and other sciences have begun to formulate rather early.

Characteristics of growth. One of the most essential factors of growth is exercise, for without exercise an organism will cease to develop, will dwarf, or even perish. For example, the human voice has tremendous flexibility in childhood, but those sounds which are not exercised regularly are gradually eliminated until in adult life an English-speaking person may find it impossible to pronounce the French *u* or the combinations of consonants in the Slavic language. All desirable characteristics need exercise, and the best cure for undesirable characteristics is such a situation as will provide complete lack of opportunity for exercise. A second characteristic of growth is that no matter what potentialities a human being may possess, those only develop which receive stimulation. All animals are self-motivated, full of instinctive activity, and man is the most active of all animals, but much of the stimulation to activity lies outside the body, in the environment, rather than in physiological phases of the body; and the higher the civilization the more the possibilities for stimulation from without. Hence, although growth is from within,

man never responds except to stimulation, and the environment that presents the greatest stimulation is the one most conducive to growth. A third essential characteristic of growth is gradual adjustment. P. T. Barnum once commented on the way in which the human oddities gathered from all parts of the world, — Bushmen from Africa and Blackfeet from Idaho, — gradually but steadily adjusted themselves to the complex situation of traveling with a circus from city to city. Even more remarkable in the last century has been the converse of this last statement: the adaptation of the environment to the needs and desires of mankind, especially as typified by urban life. Steady, gradual development is of such outstanding importance that education should be geared to a rate of progress that is continual at all times.

Adolescent youth, which is the personnel with which secondary education is largely concerned, marks a period of rapid but chaotic development. Except in early childhood, no other period shows such rapid physical change; no other period shows such divergent characteristics. Take, for instance, a fifteen-year-old boy just entering the ninth school year. He may be prepubescent, pubescent, or postpubescent; he may have attained his full height or he may not have started upon his period of adolescent development; he may be a child or he may be a man. Thus while each individual develops gradually and steadily, the various capacities of the individual do not actually unfold in any set order or at any set time; and while the development is gradual, the manifestation of the change frequently comes suddenly, touched off by a new stimulus.

Among the more prominent physical characteristics of adolescence are the following: (1) the long bones of the body grow rapidly; (2) the face lengthens; (3) large muscles develop; (4) the pelvic and shoulder girdles develop; (5) the size of the heart increases and its rate diminishes; (6) the chest and lungs develop, and dormant infections or affections of the vital capacity become active processes; (7) while the

size and weight of the brain and skull are attained during prepubescence, adolescence witnesses rapid development of the nervous system; (8) the larynx develops (more in the male than in the female), the glottis nearly doubles in length, and the vocal cords lengthen and thicken; (9) the reproductive organs grow, hairs appear on pubes and armpits, hair appears on the face and chest in the male, and the breasts develop and the hips round out in the female; (10) the glandular action of the body increases, the complexion changes, perspiration increases, and the emotions increase in intensity and range.

The implications of these characteristics may be stated as follows: (1) continued physical adjustment causes awkwardness or lack of coördination, both internal and external; (2) the development of sex organs affects the redirection of interests and attitudes; (3) rapid bodily development makes the adolescent self-conscious, introspective, shy; (4) new physical and mental power opens up new fields of interests, needs, and capacities; (5) adolescence requires a new orientation in physical, mental, and social contacts.

Amount of growth. Owing to the fact that early attempts to measure physical growth were fallacious in that they attempted to establish age norms by measuring different children at different ages instead of measuring the same child at different ages, and also owing to the fact that averages, without consideration of variability, were universally used to determine these norms, no very reliable statistics as to physical growth are as yet available. However, we are fairly safe in saying that physical growth, between the ages of five and twenty-four, can be plotted as a flattened normal curve with its median at 13.5 years for girls and 15.5 years for boys. During this time growth in height increases from 41 inches to 69 inches, weight increases from 45 pounds to 156 pounds, and lung capacity from 1000 to 4000 cubic centimeters, according to averages taken from measurements of 100,000 school children. These figures are not to be considered absolute, — only indicative.

Rate of growth. Rate of growth is even more liable to the fallacy of averages just noted, and reliable statistics as to rates of physical growth will not be available until carefully worked-out measurements of individuals over a long period of years are accomplished. Statistics taken from averages of a great number of children show that, between the ages of five and twenty-four, children grow from 1 to 4 inches a year and attain their full height. They increase in weight from 5 to 15 pounds a year, and attain their normal weight only after growth in height is completed, between the ages of fifteen and thirty; growth in lung capacity, ossification of the metacarpal bones, rates of cephalic diameters, strength of grip, and other such measurements all tend to show that growth is gradual and steady where individuals are averaged.

When, however, individuals are considered as such, the characteristics of rapid, uneven, and irregular development are outstanding. The great variation and the extent of the range of individuals in physical measurement enforce the conclusion that individual variation in rate of growth is more striking than conformity to the average. These variations are distinctly individual, one adolescent gaining in height rapidly without corresponding gain in weight concomitantly with gain in height. In one adolescent these changes are accompanied by the characteristic changes of pubescence; in another the latter are absent. Development of the nervous system may precede, accompany, or follow development of the physical system; and development of intellectual capacity seems to have but a remote connection with adolescent change, for bright children do not differ greatly from dull children in rate and ratio of physical development. There needs to be emphasized here that the earlier attainment of maturity of southern Europeans over northern Europeans, of negroes over whites, of girls over boys, gives to the first of these groups a fictitious advantage during the early years of secondary education, and much good, but undeveloped, material is eliminated permanently from secondary education

through a failure to understand that the second of these groups, at about the age of twelve to fourteen, is often fully two years behind the first in maturity and that the Anglo-Saxon boy is at a double disadvantage at this time.

Individual differences. *Health.* At no period of life is health supervision more necessary yet more difficult of accomplishment than during adolescence. The amount of recreation needs careful regulation, and sleep and rest are most important items. Adolescence demands a more nutritive diet than does any other period of life; the studies carried on in the schools in this country show that the amount of food taken by adolescents far exceeds the demands of any other period, amounting to four or five thousand calories a day for boys.

In secondary education, until after the beginning of the twentieth century, health and exercise were considered no business of the school, except in a perfunctory way. Health has now become one of the fundamental objectives of secondary education, and many efforts are being put forth to develop a health program and an exercise program suited to the individuals, based upon physical examination. Where no physical defects are present and remedial exercises are consequently not prescribed, the present health program consists in developing permanent interests in sports and games that may be expected to function throughout life. Often, in connection with general science, necessary health information suitable to adolescents, particularly with regard to sex, nutrition, and human biology, is being given to high-school students. In connection with the use of competitive games and sports it needs to be pointed out that grave danger attends interscholastic meets and contests for high-school students unless the participation of all contestants is made subject to physical fitness determined by frequent, thorough physical examinations conducted and certified by a competent authority. Rapidity of growth makes less strong fiber and sinew temporarily; unequal growth of parts disturbs

balance and gives a false sense of power; highly stimulated emotions are often mistaken for physical vigor. More harm than good may result from the use of competitive sports as a part of high-school health programs unless they are properly controlled by competent directors rather than subsidized and promoted by overenthusiastic chambers of commerce, boards of trade, local sporting interests, and the like.

Maturity. In no stage of life are individual differences as to state of maturity more widespread than during the period of secondary education. Many children of southern-European ancestry have reached physiological maturity by the beginning of the period. Early maturity is followed by a cessation of growth in stature and a general slowing down of development. The decrease in yearly increment for adolescents who mature late is prolonged over a much longer period than for those who mature early, and it seems a sound conclusion to draw that late maturation results in a greater total increment of development than early maturation, although such pupils are at a comparative disadvantage during the whole adolescent period. Physical maturity in no small measure determines the type of games played, the social group sought, the moral and religious awakening, and determines interests, attitudes, and ideals to an extent not fully realized in usual high-school practice.

Sex. Are there any substantial differences in intelligence between boys and girls? The usual answer, following Thorndike's findings, is in the negative, but the following quotation is interesting as expressing another view:

> It is clearly shown that while there is a large amount of overlapping between scores made by the two sexes, the median score of the boys is higher, and further, the girls receive relatively more low scores than do the boys; also that they receive relatively fewer high scores. A similar investigation by Book a few years ago of seniors in the high schools of Indiana revealed the same consistent sex differences. He explains the superiority of the boys over the girls as follows: "It is . . . evident that more girls than boys are graduating from the high schools of the State,

and that the difference in mental ability found cannot be taken as typical of actual differences in the mental capacity of the sexes." He assumes that the boys who have not gone to high school or who, having entered, have not continued, are on the whole of lower intelligence than those who have remained. Hence boys in the senior classes on the whole are a more selected group than are the girls in those same classes and therefore have a higher median intelligence. However, it should follow, if this is the case, that the number of girls receiving high intelligence ratings would at least equal the number of boys. An examination of the first table presented . . . shows this is not a fact. Only one girl received a score of 80 (on the Brown psychological examination), while four boys attained this figure; for the score of 75, there were five boys to two girls; for the score of 70, there were 31 boys to 18 girls; for the score of 60, there were 114 boys to 99 girls. For the median and low scores, however, the girls markedly exceed the boys both as to actual number of scores and the percentage of scores. This evidence seems to point to a difference in intelligence between the two sexes, which, if small, is still real.[1]

Physically, emotionally, and in the matter of attitudes and ideals sex differences are rather pronounced. To what extent these latter characteristics are due to living in a world dominated by the male, no one is capable of saying; but to the American the sex differences in any of the above-mentioned fields seem so insignificant compared with the individual variation that division of secondary education on the basis of sex appears to have but little justification and to produce no measurably desirable results.

Near ancestry. Just as later physiological maturation holds out ultimate advantages for boys over girls, so does later maturity due to racial ancestry hold out advantages for those who contend for Nordic supremacy; for the farther east and south in Europe one goes the earlier appears physiological maturity as exemplified by studies of school children in the United States. Individual differences due to racial ancestry are not easily overlaid by climate, nutrition, or social environ-

[1] S. S. Colvin, Intelligence of Seniors in the High Schools of Massachusetts, *United States Bureau of Education Bulletin No. 9*, 1924.

ment, as far as physical features are concerned, for children of the second and the third generation maintain the racial characteristics with considerable uniformity.

However, popular notions as to family superiority find but little objective scientific evidence to support the contention of superiority of one over the other. The great outstanding fact is not that one race is superior to another or that the intelligent father will have an intelligent son or the robust mother a robust daughter, but rather that, regardless of ancestry, individuals within the various possible classifications of ancestry vary over such a wide range as to transcend the minor variation between different groups arranged according to ancestry.

THE PSYCHOLOGICAL NATURE OF HIGH-SCHOOL STUDENTS

Theories as to order and form of psychical development. Secondary education has been considerably influenced at times by conflicting theories as to the order in which mental traits develop. One theory, that of *serial or periodic development*, held that mental traits such as reasoning, observation, perception, imagination, and so on develop at different stages in the child's life and consequently that education should be adapted to the traits under the process of development. For example, Bagley held that the period of childhood was one of sense perception, boyhood one of imagination, and adolescence one of reasoning. On the other hand, the exponents of *the theory of concomitant development* held that there are no periods of development of reasoning or imagination or sense perception as such, but that all mental traits develop together; hence, for example, a child can reason, within the range of his experience, with considerable logical force, but as he grows older can reason with increased logical validity.

There were also two conflicting theories as to the form of psychical development, particularly as it had to do with adolescence. One, *the theory of saltatory development*, held that

mental traits develop in relatively abrupt and sudden changes, and writers favoring this theory expatiated at length on "the new birth," "the influx of new sensations," "egoism giving place to altruism," "symbolism is now, for the first time, possible," "the migratory instinct shows a great and sudden increase." Opposed to this theory *the theory of gradual development,* which has been rather completely supported by psychological findings, has held that psychical development is gradual; however, due to the fact that stimulation from the environment is the force that sets off the capacity that has been gradually developing in the individual, the manifestation of this capacity may appear with rather startling abruptness at times. Another theory, *the theory of recapitulation,* has held that the human child, from embryo to adulthood, recapitulates the various stages of development of life from the one-celled organism to the civilized man; that, for example, boyhood represents the age of barbarism, and adolescence the beginning of civilization.

It hardly needs to be said that scientific investigation into the nature of mental traits has had difficulty even in finding the traits themselves, much more difficulty in isolating them one from another, and has found it impossible to chart any order of sequence of development. It has likewise tended to disprove that there are types of individuals, such as philosopher, warrior, artisan, or slave, as postulated by Plato, or castes, as postulated by society during various stages of development. Also, in more modern times, scientific investigation has passed into the discard the classifications into the visual-minded, the auditory, the kinæsthetic type; or, more recently still, the separation of those who should work with their hands from those who should work with their heads. Nothing comes out more clearly from modern psychological investigations than that human beings are individuals and need to be treated as individuals, and that no form of classification can be made without some injustice. Hence classification should ever be flexible, based upon purpose and

interests primarily, and only secondarily upon age, grade, subject matter, or intelligence.

Measurement of intelligence. *Tests.* Intelligence has been defined as intellect plus knowledge; the intelligence test attempts to measure intelligence by measuring the knowledge actually obtained, and by deduction infers that the capacity to absorb knowledge is measured by the amount actually absorbed. In reality what is measured is the educability of the child; no doubt, many valuable human characteristics are not evaluated by the intelligence test, but rather only such traits as make for the possibility of success in our educational system as now organized. Within this narrow field (success in school) intelligence tests are of sufficient reliability and validity to be used as a basis for classification and are, with little doubt, more just to the pupil than many bases of classification now in use. The following quotation from the Twenty-first Yearbook of the National Society for the Study of Education is to the point:

(1) The term "general intelligence" signifies an innate capacity or group of related capacities to acquire intelligence in specific situations of life. It can be identified closely with learning ability.

(2) This ability is measured by determining the relative degree to which a group of individuals, or a single individual in comparison with a group whose attainment has already been measured, succeed in their scores in tests constructed in such a way that the materials used are of common knowledge and common interest to those so tested.

(3) Little or no value can be attached to the results of tests in which the individuals tested vary in any marked degree as to their opportunity and desire to become familiar with the materials of the test employed. Hence children of different social and economic status may score quite differently in such tests not because of any real difference in native intelligence but because of such differences in home surroundings that some are favored while others are handicapped, particularly as far as the use of the English language is concerned. Also boys and girls, because of their different interests in the world about them, may

make quite different average scores in tests as a whole or in various elements included in tests, without differing essentially in native capacities.

(4) Intelligence tests thus measure not only native intelligence but interest as well, and to a certain extent character qualities, since learning involves not only intelligence and interest, but also earnestness of purpose and will to do.[1]

The I.Q. The Stanford Scale expresses the mentality of the pupil as an intelligence quotient (I. Q.), found by dividing his mental age, as determined by the test, by his chronological age. For high-school purposes a pupil with an I. Q. of 80–89 may be classed as dull normal; from 90 to 109, as normal; from 110 to 119, as superior; from 120 to 139, as very superior; from 140 on, as a genius or near-genius. The normal and superior groups comprise over three quarters of the total school population, with the very superior and dull normal about equally represented and with the near-geniuses usually less than 5 per cent. It is plain that considerable selection on the basis of intelligence has already taken place both through elimination and retardation.

Mental tests distinguish individuals in a new way, for they give us information that we never had before concerning the inherent capacity of the pupil. This information, on the whole, has proved reliable and is capable of statistical treatment and rather exact comparison, so that conclusions as to special modes of treatment for individuals have a new criterion. The gradual movement of educational practice toward more individual treatment has a new ally in the I.Q., because individuals may be more sharply and accurately separated from each other by the I.Q. than by any other present method of classification. Yet the I.Q., in and by itself, is not a valid basis of comparison, for the evaluation needs to be supplemented by teachers' judgment, physiological age, social maturity, and an estimate of character.

[1] Twenty-first Yearbook of the National Society for the Study of Education, Part I, pp. 42, 43.

Educational determinism. There has been much said in recent years concerning educational determinism. To some people, realizing the infinite possible combinations of mental traits contained in any one individual and the meagerness of the range of traits examined by an intelligence test, it has seemed presumptuous definitely and finally to tag a human being as dull or superior; moreover, many people have feared that once such a label is put upon a pupil his future educational course will be determined by this criterion and he will be steered into channels of education that will fix his future with a finality out of all proportion to the validity of the criterion. Democracy has always held that each and every individual, so far as the State had any share in the matter, should have an equal opportunity to become, for example, president of the United States, or to attain any other socially justifiable ambition that he may have. European school systems, in so far as they use psychological tests, use them to determine the opportunity for secondary and higher education; but even here the psychological test in actual operation has resulted in no curtailment of secondary education for those already attempting it, while, on the other hand, it has been used as a means of finding talent among groups which ordinarily would not attempt secondary education and has opened the doors of opportunity to pupils who without such tests would never have the chance for future education. In the United States, more mindful of democracy, opportunity for secondary education has never been based upon intelligence theoretically, although practically selection on this basis has been the criterion for promotion quite as much as on achievement in subject matter. So long as we give marks or grades, promote or fail to promote pupils, the criterion of intelligence will enter into the decision, and it does not seem to be undemocratic to use the intelligence quotient as an aid to judgment, provided no more reliance be placed upon it than its validity would seem to warrant.

Measurement of character. Modern educational thought seems to say that the ultimate objective of education is the building of character, that native intelligence is constant (so education can add little to it), that information is a means rather than an end, and that education in the past has been too much concerned with mere information; hence character, or that relatively stable nexus of responses which are dependent upon a mixture of habits, attitudes, ideals, and information, is the real goal of education. Thus the measurement of character, or personality, has become extremely desirable, but has proved very elusive. The "will-profile" test was the first of these attempts and tried to measure volition, speed of decision, freedom from inertia, care in details, resistance to suggestion, perseverance, and so on. The Voelker test, in contrast to the general nature of the will-profile tests, attempted to measure very concretely tendency to exaggeration, punctuality, honesty, truthfulness, and so forth, in controlled situations. The Liao tests attempted a moral-judgment scale by presenting multiple-choice reactions to definite moral statements. These and many other similar tests have not yet proved satisfactory, but the desirability of a better basis upon which to judge character remains a pressing need of the school system; for the most important objective of education is the one least well measured at the present time.

Emotional manifestations. Education is far more than an intellectual process, it is vitally concerned with motives that underlie action. Repression, invoked for the purpose of "training," has been the bane of secondary education since the time of the Greeks, but there is a very definite trend at the present time toward more creation and less training in secondary education. Creation, growth, development, all depend upon stimulation and the rousing of emotional enforcement, and the present trend toward dramatics, music, art, and other forms of expressing one's personality is a trend toward greater outlet for emotional manifestation.

Education is far more than an individual process, for the extent to which the individual becomes socialized, becomes socially efficient, capable of coöperation, capable of contributing to the constructive forces of social betterment, is an adequate measure of his success as a citizen. The adolescent possesses to a marked degree the capacity for coöperation, for leadership and followership. Clubs, those symbols of adulthood, have a peculiar attraction, and through their influence, rightly handled, democracy may be practiced and citizenship learned; but without guidance snobbery and class distinction are a very possible result. No other age is more open to the power of suggestion, to mob psychology, than the high-school age; the power of example, hero worship, novelty, fashion, and so on have peculiar force, and there is an eager curiosity to know and to do, that too often has little opportunity for exercise in school in the fields that the student desires to know. The student has a right to expect that the school will teach him the criteria by which divergent points of view, attitudes, and ideals presented in the social, vocational, and religious worlds about him may be adequately judged.

Individual differences. The high-school student, in his psychological nature as well as in his physiological life, in sex characteristics, in social and economic status, and the like, manifests all kinds and degrees of individual differences. Perhaps no one thing is more nearly certain about the high-school population than that each individual in it is a distinct psychological entity, unlike all other individuals. Interests, tastes, ambitions, native capacities, vigor of thought, sense acuity, imagery, and so on differ over the entire range of possible permutation and combination for any one individual. Partly by inheritance and partly by acquisition every high-school student has a mental equipment different from every other individual in the world; with it he must work out an adjustment with his world. This equipment is usually of a superior quality; it is often in poor adjustment; it is generally abundant in quantity and in force. However, none of these

statements is true for every student found in high school, as has been often demonstrated. Individuality is the trade-mark of the psychological characteristics of secondary-school students.

Book, in his study of Indiana seniors, makes the following statement:

> . . . high school seniors, and to a marked degree all high school students, are a select group of young people. The high schools of the state are in a real sense class schools, planned and conducted for young people who possess more than average mental capacity or who possess native mental ability of a certain sort. All occupational and economic classes found in the state are represented in these schools and in the senior classes of these schools in so far as they have children of the mental caliber and mental type which the high school conserves. But school statistics show that relatively few pupils who enter the public schools remain in school long enough to enter high school, that of those entering the high school about one-third drop out the first year, and that on the average only about 10 or 15 per cent of those who started in the first grade remain to complete a high school course.
>
> It has also been shown that most of this elimination before and after entrance to high school is due either to inferior mental ability or to a lack of the particular type of ability which the high schools foster. . . . They are the best of a select group of superior individuals and represent the best mentally endowed young people in the state so far as the high schools are able to select and conserve them.
>
> That they possess a rather special type of mental endowment is suggested by the fact that different school subjects (e. g. the academic and vocational) have been shown to require for success different grades and perhaps kinds of mental ability. And since our high schools have developed only certain types of curricula, the talents and mental capacities of young people with special mechanical, musical, artistic, and other special capacities and interests have not, as a rule, been conserved and cultivated by the high school. Students with these types of special mental ability were rarely represented in the senior classes tested. . . .
>
> Notwithstanding this selective feature of the high school, which makes it possible for only the fittest to survive until graduation day by the constant elimination of those with the

more inferior grades of mental ability, marked individual differences in intellectual capacity occur among the members of any single senior class, between the senior classes representing different schools, and the seniors coming from different communities and different sections of the state. . . .

Individuals with the most superior grade of intelligence, i. e. those whose mental test scores placed them in the highest 1 or 2 percentile group, were found in every section of the state; in every kind of high school from the smallest and weakest to the largest and best; in every type of community — rural, manufacturing, and urban; in every occupational class; and in all economic strata except the wealthiest; though not in equal proportions. They were not found in all individual high schools of the state nor in every senior class, but there is evidence that a proportionately greater number of individuals belonging to this superior group come from the rural and agricultural sections of the state than from any other type of community.[1]

The gifted student. Democracy, defined by Dewey as equal opportunity to develop one's personality, has been unjust to the gifted student; for while many pupils are retarded, few are accelerated. Throughout the system gifted students are held down and taught bad habits of work by being kept at tasks below their capacities. Recent investigations have shown that frequently, by the time they reach high school, their superior inherent capacity has been so overlaid by poor habits and attitudes that they do not succeed well in high-school work. Psychology has proved, to its own satisfaction at any rate, that persistence, patience, concentration, and similar virtues can be taught more easily to bright students than to dull ones; yet the result of our present system is that the bright pupils are lazy, and the higher up the scale of intelligence we go the lower is the accomplishment quotient.

Psychologically, the gifted student is a better all-round individual. He has better health, better eyesight, better memory, better reaction time, more ingenuity, and better judgment. Due to the linguistic nature of intelligence tests

[1] W. F. Book, *The Intelligence of High School Seniors*, pp. 293 ff.

it is probable that the "gifts" of the gifted student lie along the paths of higher education, and he should be urged to pursue his education as far as possible; yet it has been found that just as large a percentage of dull high-school seniors as bright ones go on to college. There are other gifted students than those with high I.Q.'s; for example, Stenquist found a low correlation between mechanical ability and intelligence. Excellence in drawing or music does not correlate well with intelligence, as measured by the present intelligence tests, nor does leadership, honesty, or reliability. More than ever before, the high school needs to seek out special excellence, wherever or however found, and suit education to it.

The normal student. The normal student in high school is a selected individual, five points above the average in intelligence, from a family of better than average economic status, of selected ancestry and race, and is considerably above the average in character traits such as are useful in school. Our schools have been made for him, and education is geared to his rate of progress; and yet, after all, the average student is a myth. As already pointed out, each individual is unique, a separate problem, a totally different bundle of human traits, and frequently excels in some trait which is socially useful but of which the school, with its necessarily narrow program of studies, does not take account.

It should not be forgotten in this connection that some of the most brilliant minds have found the schools insufferably dull and, in turn, have been characterized by teachers in the same terms. Class reunions frequently point to some supposedly dull boy as the outstanding success of the class. On the other hand, success in "English" is no guaranty of success in earning one's living by writing. It does not seem to occur to certain writers on this problem that the mental pabulum provided students might be changed or that the standard set for beginning classes might be too high or that in failing 36 per cent of the freshmen, as was done in one of the "best" schools, the teachers were deliberately eliminating

those who did not take to academic subject matter. It is both cheap and easy to provide a limited amount of academic subject matter, prepare the necessary group for college entrance, and eliminate the rest, — but it is not real education. Between 90 and 95 per cent of the boys and girls in high school are normal individuals, and when as high as one third of the freshmen are eliminated we may say that the "failure" is on the part of the school rather than on the part of the pupils.

The indifferent student. On the other hand, there is a class of students who are ill suited to book learning and who are real failures. When the accomplishment quotient of a pupil drops below 90, it is evident that there are factors at work that make book education for such a pupil expensive and relatively useless. Unless school work can be provided that is genuinely interesting and successful, the indifferent student is more likely to get an efficient education by earning a living in the workaday world than by loitering through high school. This is true because for such a student, as far as books are concerned, the vital factor in education — interest — is lacking. Without interest in learning, without purpose and determination to receive something from school work, there will be little or no self-activity on the student's part. In the field of the world's work, if such a student is properly placed and directed, it is probable he will find an interest sufficient to stimulate him into a learning-attitude; he will, in consequence, receive an education, different in kind, to be sure, from what the school offers, but nevertheless an education. Public education does have a duty to perform for such students, but it is not the duty of trying to force them to learn from books; rather is it to seek with them and find for them the life situation which will stimulate their interests into activity and provide the learning-situation.

Discipline a matter of psychology. Educational psychology has opened the door to a clearer understanding of adolescents, and it becomes more and more evident that what was called

class discipline a generation ago was a combination of inappropriate subject matter, poor methods of teaching, and a wrong attitude on the part of the students. Subject matter is rapidly becoming useful, appropriate, functional; there is a decreasing use of teaching-methods based on training and mental discipline, and the pupils are attracted and held by a genuine interest in school work.

Under these conditions discipline becomes an individual case study of psychology. When a student is failing or is making a nuisance of himself in class or seems to lack interest, then is the time for the teacher to put the facts of the case down on paper, assemble and classify other records and opinions, seek an interview with the student, and thrash out the matter. It is evident that there is some maladjustment, and it is the essence of efficient teaching to solve such problems in the light of scientific analysis.

PUPIL-GUIDANCE

Means and methods. When the high school was principally a college-preparatory school catering to a selected group which had but one purpose in mind, there was little need for guidance; but now that the gates of secondary education have been thrown open to all adolescents, regardless of purpose, intelligence, length of stay in school, or probable vocation, it has become evident that guidance is necessary. The program of studies also has become increasingly varied, and it is evident that pupils, relying upon what other pupils say about courses, are frequently making poor choices based upon hearsay, snap judgment, and opportunism, so that they frequently come face to face with graduation with a poor assortment of courses for the purposes they have had in mind. Parents too give less guidance. They do not know the new and varied program of studies; the home life under modern city conditions affords little counsel and little demonstration of life's vocations; also the parents are away from home to

a much greater degree and altogether are such a heterogeneous group that wise counsel or expert guidance cannot uniformly be looked for from them.

Yet there has always been guidance for the pupil in choice of studies (educational guidance), in choice of vocation (vocational guidance), in choice of associates (social guidance), in choice of recreation (avocational guidance), and in choice of ideals (moral guidance); but such guidance has been largely careless, whimsical, and unwise, neither systematic nor based upon objective, scientifically organized measures. Unwise guidance has been frequently given by teachers, who on very insufficient evidence have made decisions of tremendous importance to the pupil; and by parents, who through insufficient knowledge have said "don't" but have been unable to say "do," so that the pupil has been forced into trial-and-error experimentation in those fields in which he has not failed. The causes of unwise guidance are plain: teachers have been inadequately trained, have been intrusted with guidance incidentally, have had little experience in the world, and often have known little more than the pupil, so that it has been a case of the blind leading the blind.

In one respect this haphazard situation was excellent, the decision and choice was the pupil's own decision and choice; in one respect it was bad, the evidence upon which the decision was based was extremely poor. Consequently guidance in the high school should be confined to the latter phase of the situation: it should concern itself chiefly with the presentation of systematic, well-organized information. For the most part it should take the form of a case study of the individual, by teachers who have been trained in guidance; but after all the information is in and the possible future modes of action have been outlined, the student should, — indeed, must, — arrive at an untrammeled decision himself.

Vocational guidance. While he is in the elementary school, the pupil is pursuing a uniform curriculum, and guidance is unnecessary; but upon entering the secondary school a choice

is suddenly forced upon him. Some high schools offer as many as sixty courses, of which the student may take but sixteen; and until he reaches the end of the high-school period, he will not know whether he has made wise decisions or not. It is evident that the decision really rests upon the answers of students to three questions: How long can you stay in school? What do you intend to be? What are your strong points? In the junior high school the answer to all these questions usually is, and usually should be, "I don't know"; for one of the chief functions of this school is exploration, offered with the hope that the pupil will come to recognize his tastes and strong points. However, by the time he reaches the ninth grade (in school systems without junior high schools he will have been without exploration) he will have to choose a curriculum, and he needs to have made up his mind, tentatively at least, as to what vocation he expects to pursue.

Too often, in the rush of the opening day at school, the timid freshman is suddenly asked by a brusque teacher, "What course do you want to take, college-preparatory, scientific, general, or business?" Faced with a decision that means much to his whole later life, he hazards an answer based on what his best chum is going to choose. Each high-school pupil should have at least one counselor, who should have an office, telephone, and adequate filing cabinets. If there are no junior high schools, the counselor should spend much time in the elementary school, getting acquainted with the facts about the pupils who are to enter high school the next year. Vocational guidance should pursue five steps: (1) the counselor should collect all possible personal records about pupils who are to enter high school the next year, including the results of standardized tests, teachers' marks, teachers' judgments as to past successes or outstanding traits; (2) considerable information about the high school and its curricula, about different vocations and the necessary preparation for entrance to them, about the probable earning

power of various occupations, openings usually found in the community, what vocations are crowded, and the like should be given to the expected grammar-school graduates; (3) a conference should be sought with the parents, and with the student present the counselor should collect all possible information as to hopes and ambitions, likes and dislikes, capabilities, possible length of stay in school, and so on, and in turn should present to the parent the opportunities offered by the school; (4) after all the facts have been reviewed, the pupil should make his decision, but should not be hurried, or advised unless he seeks advice; (5) before school starts, the counselor, in conference with the pupil, should make out a tentative program for his whole secondary-school course, check up with him the necessary conditions for college entrance or other further preparation, and in general see to it that no doors are closed to a change to a higher choice.

Educational guidance. The first, third, fourth, and last steps mentioned above are in reality educational guidance, for educational guidance is essentially adapting the program of studies to the capacities and purposes of the individual students. Educational guidance in the past has been hard and fast and has been accomplished by offering only one possible course, but with the spread of the elective system into secondary education more and more educational guidance is needed. This is usually accomplished in the large high schools by the classroom-adviser system or by the group system, with a teacher assigned to each group for its length of stay in school, and is supervised by the vice principal or the dean. In some schools it is part of the work of the vocational adviser, and in the smaller schools is handled by the principal.

The need for educational guidance varies inversely as the size of the program of studies. Given sixteen courses, there is no choice and no need for guidance, but in the large city high school there are many alluring bypaths that beckon the pupil, but which, excellent as they are for the pupil who is not to pursue his education farther, spell educational retardation

for the pupil bent on higher education. On the other hand, pupils attempting the college-preparatory curriculum may find it too difficult and may need adjustment to other curricula; or pupils attempting a general curriculum may find interests that carry them on to college preparation. Whatever the case, adjustment and guidance will frequently have to be made. It is well to provide for wise, systematic, objective measures, with some person definitely in charge, because these decisions are of vital importance to the pupil, to the community, and to social progress. A little more deliberation in choice of courses, a little more thought as to ultimate objectives, a little better criteria for judging the worth of the educational offering, a more personal and direct source of information, a more objective and systematic method of procedure and diagnosis, are what educational guidance should offer.

Social guidance. Coincident with the expansion of the program of studies and the onset of vast hordes of students has come the rise of social activities. The appearance of extra-curricular activities, student government, clubs, and entertainments has called for some guidance on the part of the faculty; for, held on school grounds and during school hours, these affairs are but enlargements and extensions of the program of studies. In the larger schools a dean of boys and a dean of girls have been appointed to coöperate with the students in the social control of the school, although the ideal of self-government and democracy has so dominated the field that much of the social control is directly in the hands of students.

In so far as the student body is drawn from an increasingly heterogeneous clientele there is increasing need for guidance in "morals and manners," as the legal statutes usually phrase it. Preaching and lecturing are inefficient methods of inculcating moral standards, so it is necessary to see that opportunities for practice in such codes as are desirable are offered within the school; and for this purpose machinery must be

provided that will function continuously in coöperation with student effort. Many principals, through the agency of the student assembly and by coöperation with student welfare committees, make this matter of social guidance no small portion of their responsibility.

Civic guidance. The State, in extending the privileges of secondary education freely to all who may care to accept the offer, has felt that the increased social efficiency of the product is worth the expense of maintaining the system. Citizenship is one of the most important objectives of secondary schools, but it has come to be realized in recent years that the study of American history and civics through textbooks alone does not guarantee the production of good citizens. The development of good citizens demands opportunity to practice good citizenship from early childhood until adult life, with increasingly wide responsibility and scope. Practice in right conduct as a school citizen is the best guaranty of correct action as a political citizen.

Hence the conception of the school community as a social-civic unit, and the necessity for providing practice in democratic modes of government if the students are to learn the lesson of democracy, have gradually spread through secondary education. In spite of many apparent failures and setbacks, due for the most part to responsibility being too suddenly thrust upon inexpert shoulders, the movement for student participation in school government has steadily progressed.

Placement. Placement has had at times an evil connotation. It has conveyed the idea that some unsympathetic, rigid system without adequate exploration, ignoring the interests, capacities, and needs of the pupils, has condemned them to unenviable life situations. The modern placement idea has arisen out of the vocational-guidance movement; for when vocational guidance and diagnosis were attempted, it was found that it was a case of balancing vocational aptitude in the pupil with vocational opportunity in the community.

If there was no follow-up of pupils who left school, no placement of pupils who were in need of temporary or permanent positions, no helping of adolescents to progress to better jobs or find subjects in night school or continuation school that would help to promotion, there was no real check upon vocational guidance. The vocational counselor did not have at his disposal the facts of what adolescents were actually doing in the vocational world, and his advice was likely to be very wrong indeed.

With the attention given to juvenile delinquency and with the rise of the idea that the cure for crime is prevention and education, the idea that supervision of adolescents in industry is an effort that will pay good dividends grew in force. It was evident that the school system was the only civic agency in a position to handle the situation and that placement of adolescents who found it necessary or desirable to stop their formal education, supervision of the employment offered such adolescents, and aid to poorly adjusted adolescents in industry were all legitimate extensions of secondary education.

Frequently a survey of the economic opportunities offered by the community was found desirable, and the spread of the idea that vocational education should take place in coöperation with industry made such a survey imperative; consequently there have arisen school agencies to which these functions of placement, of economic survey, of coördination of school work with industry, and of vocational guidance have been assigned. Thus, built on the principle of coöperation with all civic and industrial agencies, the modern high school is increasingly becoming functional and ministering in an increasingly practical way to the needs and interests of both the community and the student. A more nearly scientific study of high-school students, made possible through the application of objective measures and standards to the study of adolescents, has revealed that treatment of these students in the mass does not secure the desired results in their

education. The consequent analysis of the high-school population has revealed problems more practical than academic in nature and has compelled extensive modification in all phases of secondary-school procedure. To meet the expanded and varied needs of these students as revealed by continued study of them, the activities of the high school have gone beyond the simple stage of specific preparation in a limited number of academic subjects to a complicated organization made necessary by the effort to guide adolescent interests in all manner of human activities. The gauge of success for the twentieth-century high school is its ability to give constructive direction and emphasis to the myriad interests and activities of adolescent life.

In general, the trend of modern education is toward guidance rather than training in the secondary school. In the early stages of the change from training to guidance, too much reliance has been placed upon the intelligence test as a measure of capacity, but reliance upon other tests of ability as well as upon some objective estimate of personal and character traits will become increasingly necessary. Furthermore, guidance has tended to set the goal somewhat beyond the capacity of the student so that the net result has been that the so-called white-collar occupations have become overcrowded and many individuals of relatively low capacity have been condemned to minor rôles in these occupations. Efficient guidance needs much more objective data, drawn from more varied sources, than has been used in the past.

REFERENCES

BALDWIN, B. T. The Relation between Mental and Physical Growth, *Iowa Child Welfare Research Station Bulletin.* Iowa City, Iowa. Entire bulletin.

BOOK, W. F. The Intelligence of High School Seniors, pp. 18–289.

BREWER, J. M., and Others. Case Studies in Educational and Vocational Guidance (entire book).

COLVIN, S. S. Intelligence of Seniors in Massachusetts High Schools, *United States Bureau of Education Bulletin No. 9,* 1924. Entire bulletin.

COUNTS, G. S. The Selective Character of American Secondary Education (entire book).

GARRETT, H. E. Statistics in Psychology and Education (entire book as a detailed treatment of statistical procedure).

HANEY, E. M., and UHL, W. L. Academic Records of Accelerated Students. Twenty-third Yearbook of the National Society for the Study of Education. Entire book.

HORN, J. L. The Education of Exceptional Children, pp. 39–162.

JOHNSON, F. W. The Administration and Supervision of the High School, pp. 106–149, 379–396.

JUDD, C. H. Introduction to the Scientific Study of Education, pp. 106–112, 170–196, 212–228.

INGLIS, A. Principles of Secondary Education, pp. 3–155.

OGDEN, R. M. Psychology and Education, pp. 239–325.

OTIS, A. S. Statistical Method in Educational Measurement, pp. 6–51.

PARKER, S. C. Methods of Teaching in High Schools, pp. 362–390, 492–510.

PECHSTEIN, L. A., and MCGREGOR, A. L. Psychology of the Junior High School Pupil, pp. 11–46.

RUCH, G. M. The Improvement of the Written Examination, pp. 1–104.

TERMAN, L. M. The Intelligence of School Children, pp. 1–29, 75–91, 135–164.

THORNDIKE, E. L. Educational Psychology (Briefer Course), pp. 69–83, 125–258.

UHL, W. L. Principles of Secondary Education, pp. 214–420.

WHIPPLE, G. M. Intelligence Tests and their Uses. Twenty-first Yearbook of the National Society for the Study of Education, pp. 1–44.

CHAPTER IV

THE PROGRAM OF STUDIES

DETERMINANTS

The objectives. The secondary-school program of studies has, during the past third of a century, gone through more changes in respect to content, organization, and administration than any other single phase of secondary education. For one reason and another subjects have been added to or taken from high-school programs, time allotments have been increased and decreased, topics within subjects have been put into new combinations, subjects within curricula have been rearranged, textbooks galore based upon various interpretations of educational theory have appeared, and all manner of "tinkering with the course of study" has gone on. Out of it all there has emerged a widespread interest in the study of curriculum problems, an organized effort to develop a defensible method of attack; and some few general principles concerning program-making have evolved. It will be many years before a thoroughly acceptable technique is established, and any present statements concerning procedure or results can be only tentative. The major emphasis of the current so-called scientific method of program-making has been upon the work of the elementary school. Out of this effort there has evolved a tentative method of approach to the problem of subject matter appropriate to the work in the high school and of experiment with various proposals. All such study must continue, but meanwhile teaching in the high schools must go on, also. There can be no revolution in the arrangement or administration of high-school subject matter, but there should be readjustments from time to time in the light

of whatever results may be obtained from the continued investigations. Because the returns are not all in and the work is still incomplete, it does not follow that nothing should be done toward reorganizing the high-school program. On the contrary, it signifies that such results as may be established should be incorporated as rapidly as possible.

From the beginning of the efforts toward "curriculum construction" it has been evident that certain factors in the school situation serve as determinants of the quantity and quality of subject matter as well as in the process of organizing, administering, and teaching such material. There is no fixed order in which these determinants act, and therefore no particular sequence in which they should be presented. They act, react, and interact constantly throughout the process of program-making. It is true that the high-school program of studies must be made in the light of the nature and needs of high-school students and their interests. It is equally true that these student needs and student interests are themselves conditioned by the other factors. Hence there is no special significance attached to the order in which such determining factors may be discussed. It is important only to keep in mind that student welfare must always be the focus of attention.

There appears to be rather general agreement that a prime factor in constructing a program of studies is recognition or discovery of the objectives to be attained by the high school. There has been very definite recognition of the fact that a mere generalized statement of objectives is not sufficient as a guide for the selection, arrangement, and administration of high-school programs, but that on the contrary each and every high school has a separate and distinct problem to solve in establishing its own objectives. Many of these will overlap, no doubt, and, however phrased, there will be identity of purpose in many respects, but the other factors besides objectives which enter into program-making are so complex and far-reaching that it is almost universally accepted that no general, all-inclusive set of high-school objectives can be

drawn up, but that each and every school must work out its own. But again it is agreed that little or no satisfactory progress can be made on this problem until such a set of objectives has been agreed upon and has been set down in definite form as a sort of criterion by which to evaluate the later work.

The conception that objectives should help to determine the subject matter of instruction is not new. What is new is the recognition and acknowledgment of the uselessness of vague generalizations and terminology as guides for program-making, particularly in relation to the choice of material. To be effective measures for selective purposes, objectives must be set forth in as specific and concrete a form as is humanly possible. For instance, a corps of high-school teachers might agree that citizenship is a valid objective for their school. Such a general objective is too indefinite, and can be of only minor service as a selective agency until it is interpreted in concrete and specific terms, possibly some such terms as abilities or skills or habits. Perhaps they may list the habits expected of a good citizen, the facts with which a good citizen is acquainted and about which he keeps himself informed, and so on. Likewise, a distinction between proximate and ultimate objectives must be made; for example, the objective of citizenship in and during high school is proximate, while that of citizenship as an accomplished end in adult life is ultimate. Objectives thus given an interpretation and brought to a focus can be made use of in selecting material for purposes of instruction. If teachers know exactly and specifically what acts a good citizen ought to be able to perform during high-school years as well as in after-school life, they know just as exactly and just as specifically in what acts they must give instruction to the students in their school. How they shall teach such acts is a problem for later consideration.

It is probable that a corps of teachers will begin and probably ought to begin with an attempt to state objectives

in general terms, and then proceed to define and interpret and expand the meaning of these generalities. In determination of objectives for a specific subject like English or shop or physical education or any other, they will likewise, no doubt, begin with the expression of several general objectives; and discovering how useless such general measures are, they will seek out the more refined means of selection. Development of specific objectives, both proximate and ultimate, for which a given piece of work is to be done is a basic determinant in program-making.

The group. But these objectives themselves, particularly those of a specific sort, cannot be determined without regard to other factors. It is the influence of these other factors and conditions particularly which makes it necessary for each school in each community to build its own program and not attempt the adoption of some ready-made plan. One of these contributing factors to the objectives as well as to the more general problem of program-making is the nature and characteristics of the community for which the program is being planned. No two communities are more than similar in their general characteristics. Thinking in broad and sweeping terms, one may say that after all there is not much difference between cities, small towns, and country areas in the United States, and one will be correct, in general. But generalizations will not do as guides by which to prepare and administer high-school programs of studies.

So it comes about that before much can be done in the way of reconstructing the material for high-school instruction there must be an investigation or a survey made of the community in order to discover its nature and its characteristics. Such matters as taxable wealth, present tax rate, occupational status of the adult population, whether the community is growing or dying, the cultural and vocational interests of the community, and so on through a long list of conditions must be investigated and known very accurately by program-makers; for these matters are determinants of

objectives, and some of them are deciding factors between the desirable and the possible program.

Besides all these material and objective factors which act within communities as determinants for programs, there are the elements of a more subjective character. The group opinions, desires, ambitions, tastes, and the like are always entering in to establish levels as well as directions of educational endeavors. In a democracy like the United States it is exceedingly difficult if not impossible to proceed in making educational readjustments very much faster or very much farther than public approval determines. The high school belongs to the public, and its policies, to be effective, must meet with group sanction, either spontaneous or developed. It is both proper and legitimate to inform the public and to attempt to modify group reactions, and it is here that the school has its master opportunity to develop its function of leadership. Public opinion vitally affects school policy, but the school can and should make public opinion.

It must be remembered also that there are other social institutions in a community which exercise educative functions, and the extent to which these institutions are active and successful in the performance of such functions acts as a determinant in program-making for the high school. If the business life of a community is conducted upon a low educative plane, if the economic instruction which the boys and girls receive is antisocial, a specific objective for the high school is thereby determined. If, on the other hand, the business life of a community is constructively educative, the high-school program will be, or ought to be, affected accordingly. The home, the Church, the governmental machine, are all likewise serving as determinants and modifying high-school objectives as they affect program-making. The effectiveness of these institutions changes from community to community and from one time to another; their influence and their results are never constant. For this reason no uniform and fixed set of specific objectives and no universal

curriculum can be drawn up. Complexity of the social order and its nonstatic character, the power of public opinion concerning the schools of a democracy, and the educational relation of other social institutions to the school, together with its own peculiar function, all enter in to determine high-school objectives and consequently the material of instruction, as well as to make it necessary to draw up specific rather than general objectives and to consider each high school as offering a separate problem.

The individual. It is a matter of common knowledge today that the nature and characteristics of individuals within a school are determining factors in its organization and administration. The individual high-school student is another (perhaps the most important and most effective) determining factor in program-making, for it is the needs and the natures of the individual students which the program of studies must satisfy and be in harmony with if it is to be satisfactory. The very mass of the numbers of pupils in the high schools affects program organization and administration in most direct ways; for example, the very quantity and mass of work which must be provided, and be provided for, determines standards, affects bases of sectioning and rates of progress.

But more because of variety in quality than of bulk in absolute quantity does the individual membership of a high school affect its program. Differences of race and nation offer varieties of customs, habits of life, political and religious philosophies, social points of view, and the like, and determine to an amazing degree the inclusion or exclusion of instructional material. Such variety tremendously increases the difficulty of securing homogeneous groups, on the one hand, or of arranging sufficiently differentiated topics, on the other. There are also the differences in physiological conditions which range from low to high, from small to great, from weak to strong, from inert to high-spirited, and in one subject alone, — physical education, — not to mention

others, affect vitally the objectives and the quantity as well as the quality of material. Individual differences of intellectual ability, of tastes, of vocational capacities or desires, of cultural and vocational background, of economic status, enter in as determining factors in all phases of program-making.

It has been pointed out many times, and may well be pointed out again, that improved means of transportation, increased facilities for intercommunication, the application of science to everyday affairs, have all complicated the life of every individual and have added multifold to human needs and interests. These events have also vastly increased the store of human knowledge, so that acquisition of facts about this complicated life is absolutely necessary for human safety. Personal protection, preservation of one's life and property, as well as satisfaction of personal desires and selfish needs, demand that certain material be included within a program of studies. Individual whims and personal idiosyncrasies have no doubt brought some subjects and many topics into consideration as instructional material, and there has been much foolishness written and spoken about adaptation of education to the individual. There is, however, the golden mean, recognized by the Greeks long ago, which demands justice for individual needs and interests wisely and sanely considered. To the realization of a sane program for individual progress and development subject matter has been made subordinate, in that it is now a means, an instrument, not the be-all and end-all of the educative process; in fact, it is more nearly agent than means. A knowledge of the student as he is and a vision of the student as he might become help to determine what shall be offered as well as how it shall be taught.

Here again are conditions which make generalization of objectives, fixity of topics, permanence of arrangement, and inflexibility of administration impossible. So long as the focus of attention in program-making was upon a plan for

securing logical arrangement in the facts of human knowledge, uniformity was possible; but with the shift of attention to focalization upon the nature of pupils, standardization became impossible. What the individual students possess and what they need provide criteria of judgment concerning problems of high-school program-making.

The body of knowledge. Finally, the extent of human knowledge, the gross amount of human wit and wisdom, affects every phase of this problem. The meager requirements for admission to colleges of two hundred and more years ago are not surprising when one considers how limited was human knowledge concerning, for instance, chemistry or biology. That recent emphasis in high-school programs has been thrown upón what is called the social studies has been conditioned by the fact that an increased body of knowledge concerning the life of man in groups has been brought together. It has been said that any textbook in science over ten years old is useless because it contains so much material that is either only partial truth or else utter falsehood as revealed by more complete or more careful investigations. Artistotle was called "the master of those who know," and yet it is somewhat of a revelation to pause and consider how amazingly ignorant this wise old Greek was concerning matters which are commonplaces in the life of every schoolboy. It is the very extent of human knowledge today which necessitates selection of teaching material; for it is humanly impossible in point of time alone, if for no other reason, for any one person ever to compass the field of knowledge. It was this conception which lay at the base of Herbert Spencer's thought when he wrote in phrases which have become almost classic for curriculum-makers:

> Had we time to master all subjects we need not be particular. . . . But we that have but span-long lives must ever bear in mind our limited time for acquisition. And . . . we ought to be especially solicitous to employ what time we have to the greatest advantage.[1]

[1] H. Spencer, *Education*, p. 29 (edition of 1883).

It is imperative that knowledge be segregated and defined and interpreted, because of the very fact of human limitations and the insatiable curiosity of man to know more about his world.

Quantity of knowledge has made for variety, and it is this variety which makes it possible to provide the channels through which differences of individual capacities and tendencies may find stimuli to growth and by which personal traits may express themselves and thus develop. These expanded and differentiated possibilities within human knowledge make the problem of constructing programs a baffling one and challenge the best thought and the united action of all concerned. Because knowledge is vast in amount and varied in kind, the chances are greatly increased that individual differences may find a channel for action and that hidden possibilities may thus be brought to the fore. So may human as well as material values be realized on in the struggle to secure race progress.

Of particular effect upon the curriculum problem is the body of knowledge in those sciences which underlie the theory and practice of education. The knowledge which man has gained concerning the learning-process, the nature of mental activity, the method and process of physical and intellectual development, the laws of growth, means and methods of human control, the thousand and one facts about human life and conduct, particularly as they relate to children and young persons, has profound effect upon educational objectives as well as upon the selection and use of such material as will aid in their realization. The present-day interest in and emphasis upon program-making, as well as the directions the study and investigations have taken, are occasioned and determined by the kind and extent of present-day knowledge in the fields of the human and life sciences. It is impossible to set up specific objectives or to discover, prepare, and administer subject matter in high-school programs of studies without the very nature of the process being at least partly determined by the

nature and extent of that portion of human knowledge which has to do with the social and intellectual life of individuals.

Fundamental to program-making in the high school, therefore, is a knowledge and understanding of (1) general and specific objectives to be attained, (2) the nature and characteristics of the community to be served, (3) the nature, characteristics, and needs of the individual students in the school, and (4) the nature and extent of human knowledge, particularly in those sciences basic to educational theory and practice.

PROCEDURES

Forces at work. *Definitions.* Before proceeding farther it may be well to attempt a clarification of the terminology used in the discussion of this question about what shall be taught in high schools. Terms are used loosely in this connection, and with little uniformity of agreement as to their meanings. For convenience and clarity, therefore, the following terminology and meanings will be adopted:

The "course" is the orderly arrangement of the kind, amount, and order of material selected in any particular field of knowledge; for example, English, general science, and the like. The terms "subjects" and "studies" will be used interchangeably with the term "course."

The "curriculum" (plural, "curricula") is the orderly arrangement of courses for different pupils or groups of pupils through a number of years, for the purpose of attaining a definite goal; for example, engineering curriculum, business curriculum. It is the body of material often called a course, but this latter term will be used as designated above.

The "program of studies" is the orderly arrangement of the entire list of activities carried on in high schools. The curricular and extra-curricular activities carried on in any particular school will constitute its program of studies.

Much of the confusion about these terms and their meaning has been due to the fact that the major portion of the investi-

gations concerning what should be taught in schools has been carried on in connection with the work of the elementary school. The elementary school has a body of common material which is *a* curriculum made up of courses, or subjects, or studies. As the time arrives, however, when provision must be made to meet individual needs and purposes, it becomes necessary to build up differentiated bodies of material suited to these individual needs. It comes about, therefore, that the single curriculum of the elementary school becomes a collection of curricula, differentiated as to purpose and as to course content. Other activities not formal or distinctly intellectual in nature become a necessary part of the activities provided for purposes of individual development. This entire list of activities suited to the high school becomes a program. The elementary school has *a curriculum* made up of several courses and other activities. The high school has *a program of studies* made up of curricula, each of which includes several courses and many extra-curricular activities.

Authority. In the course of the development of secondary-school programs of studies there have been three distinct types of force at work to bring into or to take out of the programs the materials of instruction. The most ancient and persistent type of force has been that of authority. At first, the Church prescribed the material and ordered what should be taught. As universities and colleges came into being and power, they became the authority which determined the body and form of instructional material. Later, as the State came into prominence and began to exercise control over education, it prescribed by law certain material which must be taught in secondary schools and often named other material which it would be desirable to have or which might be legally included. All these were external authorities making up for the schools their programs of studies. As organized city systems in the United States developed, authority to control schools became delegated to principals and to superintendents. The studies within the programs, the arrangement of them, and

all details concerning them were then prescribed by an internal authority. The superintendent or the principal made the program of studies, the teachers taught it, and the students studied according to it. All these forms of authority still exercise greater or less force in the determination of the material of instruction in the high schools of today.

Theories. In more recent times a second type of force affecting program-making has appeared; namely, philosophical theories about subject matter and about students. So long as authority went unquestioned and unchallenged there was no demand for revision of subject matter, and certain subjects enjoyed a monopoly of position in school work. This does not imply that authority, as the dominating force, had no theories according to which selections were made, but only that it was not necessary to make use of these theories in order to substantiate the demands for inclusion or exclusion of any particular body of teaching-material. Conflict between authorities brought about differences in demand for certain kinds of subject matter. In defense of these demands came the statement of theories concerning education and their application to selection of subject matter. There came a time, for example, when the practical-minded trade and working groups began to think for themselves and to demand a voice in the world's affairs. Hence they sought justification for the necessity of studying particular types of material. Thus there has arisen the question of values in teaching-material, and theories of educational values have become forces which modify programs of studies. Claims and counterclaims are made and refuted, efforts are made to arrange subjects according to a hierarchy of values, appeals to authority and reliance upon majority practice provide defensive measures. By resort to psychology, to biology, to sociology, to logic, to empiricism, and to all manner of sources abstract theories about the nature of subject matter and its effects are built up, and the material of instruction is selected, arranged, and administered in accord with the

theory which becomes most powerful. For example, under the influence of the recapitulation theory concerning the educative process efforts have been made to select material appropriate to the savage period, the barbarian, the Greek, the Roman, and so forth in the development of the life of the individual. The project curriculum is a natural outgrowth of the self-activity (learning-to-do-by-doing) theory of education. In like manner it is claimed that subjects as such have value as discipline or value as culture, or that certain material as such has universal value and other material has conceptual value, while still other material may possess value as utility, and so on. On the strength of these theories affecting subject-matter values the selection, as well as use, of teaching-material is made.

Scientific attitudes. A third force is the scientific attitude of approach to the study of educational problems. It is the youngest of the forces at work and is even yet very unsteady and uncertain in its movements. At times it is a rather uncertain trial-and-observation-with-inferences procedure. A certain selection or arrangement of material has an appeal, and it is placed in the program. The teachers do their best with it; they observe its effects, as do the principal and others concerned; and as a result of the inferences which they draw as to its results, it is accepted or rejected as a fit body of material for the program. In other cases a real experiment under controlled conditions is subjected to measured results, and the decision is reached as to whether or not it shall have a place in the program. It is the force of the scientific movement in educational procedure determining subject matter of instruction. Its techniques are still very crude and very imperfect and its results yet uncertain. It has, however, demonstrated its utility as a power to modify instructional material in the high-school program of studies.

Methods adopted. *Dogmatic.* Each of these forces has its method of operation. In fact, it has not been possible to describe the forces without implying the procedure which

each follows. With authority the ruling force, only one procedure is possible, — the dogmatic. Whether the authority draws up the program *de novo*, or whether it is the result of consulting various authorities, or whether it is made up by the scissors-and-paste-pot process, or whether it is acceptance of the prevailing style as shown by frequency of occurrence, the method is the same, — dogmatism. The authority prescribes the material, and that is the end of it. Teachers may desire change, pupils may complain of the program, but the mandate has been given and there is no escape from the edict. By legislative enactment it becomes illegal to teach certain topics. Colleges demand certain subjects, and that ends it; the law states certain material as essential to the work of the high school, and it has to be given; the school executive issues a program of studies, and that is the body of teaching-material. Under the force of authority in making high-school programs of studies there is only one method, — dogmatism. A variant of this is beginning to be found in modern practice when official authority delegates its responsibilities and its duties to teachers and even to student reaction. Here, of course, the method becomes one of coöperation, but in reality the force at work is no longer that of authority but rather that of scientific attitude.

Analytic. But with the demand that subjects and topics justify themselves and with the insistence upon examination of values in subject matter the situation becomes complicated and a more defensible method becomes necessary. The method adopted has been that of analysis. As knowledge and experience have increased, the field for analysis has expanded and the techniques have become more refined, but the analytical method has remained.

The various ways in which the procedure by analysis is applied to selection of subject matter and to defense of its inclusion or exclusion are determined by the objectives set up for education to attain. With knowledge-getting as the goal, subjects are analyzed to discover if they contain the

requisite factual material, and they are accepted or rejected, are organized and administered, accordingly. A variation of this knowledge-for-knowledge's-sake value is the knowledge value a subject may have as preparatory to further pursuit of learning. This is a common mode of justification for subjects in the high-school program; that is, it is needed as preparation for college, for trade, for business, and so on, and a deferred and perhaps contingent value is claimed for a topic or a subject.

Certain subjects for certain groups cannot be sanctioned on either the intrinsic-knowledge-value or the preparatory-knowledge-value basis, and it has come about that subjects have been analyzed to discover their value as disciplinary material. If certain mental faculties develop through exercise, then those subjects which exercise these faculties most and best are the ones to include in programs of studies, such a conception being based on the idea that education is a process of mental training. Analysis is then resorted to as the method for ascertaining the disciplinary values inherent or lacking in the subjects which claim a place in the program of studies. Such a method is valid exactly to the extent that the theory of transfer of training is valid.

An extension and variation of this procedure is the conception that subject matter possesses certain inherent functional values. It is assumed that since subjects of study are the precipitate of racial experience, they therefore typify the things necessary for successful living. Hence analysis of them will show that certain parts of certain subjects are useful for direct application to life; in other studies are materials which the race has considered it is "good form" to know; in other fields are topics which are intrinsically cultural, basic to appreciations and the enjoyment of life. All these and more are looked upon as functions, intrinsic within subjects themselves. By analysis of subjects it is considered possible to discover the relative functional value inherent within each subject and thus determine its place in a program of studies.

It is evident that such a point of view is not possible with knowledge thought of as only an end in itself. The material of instruction under such a conception as this last is beginning very strongly to take on the nature of means rather than end. It is the transition point of view to the position that subjects and studies may serve as stimuli to rouse activity within the educand. Development in the use of the method of analysis shifts the emphasis from subject to student, and the attempt is to discover functional activities among the students; that is, what are student activities, and what subject material functions in these activities? Instead of trying to analyze out of geometry its intrinsic functional value, for instance, the effort is to discover life activities in which geometry functions. The method remains analysis, but the point of departure is the human rather than the material element in the situation. It is this modification of the analysis method and its consequent expansion that constitute the so-called scientific method of curriculum construction, — a matter which must receive separate and detailed consideration. Meanwhile it must be remembered that analysis of subject matter as such in any of its forms, as a method of program-making, may be found in use somewhere even at the present time. None of its forms is entirely obsolete.

As the focal point of attention for the educative process shifts from subject matter to student, it becomes necessary to analyze the human element in the teaching and learning situation. Under the influence of the theory that children are but adults in miniature, analysis is made of adult life to discover its nature, its purposes, and its activities. So it is revealed how adults grow, how they think, feel, act, — singly and in groups. By analogy it would appear that young people may be expected to grow, think, feel, act, in like manner to adults, except to a smaller degree. Extension of the investigations to include young people and children as well as adults reveals the fact that these latter have a way all their own of reacting to environment and that young life has a nature, a

set of purposes, and forms of activities peculiar to itself. Analysis of students to discover *their* nature, *their* ideals, and *their* activities becomes a necessary part of the scientific approach to the study of the high-school program of studies.

Experimental. The scientific attitude toward program-making has necessitated, moreover, the method of experiment as a test of the analysis made of subject matter and of student. Analysis alone without a measured experiment as a check upon it is not necessarily scientific procedure, at least according to the modern conception of scientific method. The culmination of the scientific approach to this problem lies in the experimental test, under controlled conditions and with measured results, of the analyses made. To stop short of this last step is to fail in the use of the scientific method, for by it the latter is completed and perfected. There must be careful and complete analyses made of the subject-matter element and of the student element in the program-of-studies situation; they must be made according to the very best techniques which it is possible to devise, and they must be checked by equally careful and complete experimental data obtained under controlled conditions. These are the methods considered most acceptable in making high-school programs of studies.

The techniques advocated. *Job-analysis.* This acceptable method of arriving at what should be taught in high schools has brought about several different techniques by which to carry on the process. One of these is job-analysis. Using this technique, the material to be taught is determined by making a selection of a particular job, — for example, plastering, — and through observation and interview discovering every least bit of the detail of facts and skills which the worker must acquire in order to be efficient. These are then arranged in a systematic order and according to levels of difficulty, — that is, in an instructional order, — and the material is ready for test and experiment. To the objection that such a technique neglects the analysis and formulation

of attitudes necessary to efficiency in a given job, the reply is made that the knowledge factors and the skill factors are all shot through with such attitudes and they cannot be analyzed out but must be taught as a part of the whole job-process. Another reply to the objection is to the effect that attitudes in a job are in the nature of ideals and are not to be arrived at by analysis but by group conference and discussion. Job-analysis as a technique is admittedly limited in its application to the simpler activities of life and becomes increasingly difficult of use as the marginal responsibilities of a job become numerous and complex; for example, the job of being a good citizen is too complex to admit of complete determination by job-analysis. In such cases this technique must be considered an auxiliary agency, whereas under other conditions it is basic.

Activity-analysis. Another technique is called activity-analysis, according to which a list is prepared of such activities as are desirable for adult men and women in a community. This list may be arrived at by survey or by group opinion. With such a list in hand the program-makers decide what experiences students should acquire in order to participate effectively in such desirable activities. The students in question may be tested to find out which of these experiences necessary to the performance of such desirable activities they lack, and these deficiencies become the material which should be taught. The attempt to use this technique presents several practical difficulties as well as theoretical ones. It is cumbersome; the list of specific activities is sure to be incomplete; it is expensive; it is difficult to determine the age-level of the deficiencies; it is based on the assumption that the prime purpose of the school is preparation for future activity; the use of group judgment is a very uncertain and questionable method by which to determine desirable activities for a future generation.

Functional-analysis. A third technique is an effort to extend the job-analysis idea to include not only activities but

ideals and is called functional-analysis. Described in the words of its chief exponent, it proceeds by the following steps:

> *First*, determine the ideals and activities which constitute the major objectives; *second*, analyze these and continue the analysis until working units are obtained; *third*, arrange them in order of importance; *fourth*, raise to positions of high rank in these lists those ideals and activities which are of great value for children even though low in value for adults; *fifth*, determine the number of most important ideals and activities which can be mastered in the time allotted to school, after eliminating those which can be learned outside of school; *sixth*, collect the best practices of the race in teaching these ideals and activities; and *seventh*, arrange the material in proper instructional order, according to the psychological nature of children and the texture of the material.[1]

It will be noted that this technique assumes education to be a process of meeting the present need of pupils, that it includes an attempt to discover ideals as well as activities as a basis upon which to select material, that it assumes that the objectives of education can be expressed in terms of activities and ideals, that it recognizes that the life outside of school will inevitably teach some of the necessary ideals and activities.

Such a technique cannot be described completely in a small space; it is complicated and demands detailed study. Two further features, however, need to be stated. Functional-analysis takes the position that deficiencies do not provide the sole material of instruction but rather indicate the points of emphasis; that, for instance, a study of errors made in algebra determines not alone the content to be taught but also the points to be emphasized. Hence it appears that the *material* of instruction cannot be determined apart from the *method* of performance; method is an organic part of the problem of program-making. Functional-analysis is recognized and acknowledged by its advocates to be a very complicated technique; it is expensive; it demands much time and

[1] W. W. Charters, *Curriculum Construction*, p. 26. By permission of The Macmillan Company, publishers.

many workers; it is difficult to organize; like its prototype, job-analysis, it works best with the simple operations; to make use of it calls for rather prolonged training in the necessary skills; — all of which would seem to indicate that program-making is a highly specialized task and demands that teachers be specifically trained in its techniques.

Content-analysis. A still more recent technique is being developed, called content-analysis, which is the exact reverse of functional-analysis. The latter proceeds, as has been shown, by working from activities toward principles; the former starts from principles and works toward activities. Content-analysis begins with a course as now organized and works backward in an effort to revise what now is, in the light of principles, rather than to abandon what now exists and build an entirely new structure. Directions for its use are thus set forth:

1. Make a detailed topical outline of the course as taught, such that all topics are included on which at most two or three days are spent in the classroom.

2. List these topics according to your judgment in the order of their probable value in real life activities to the pupils at present enrolled in the course.

3. Make a parallel list of typical life situations in which you believe each topic could be most usefully applied. This is best done by translating each topic into the specific difficulties, if any, which mastery of the topic would help pupils to overcome.

4. Submit the parallel lists to other successful teachers of the subject, intelligent persons of affairs, and teachers of other subjects, asking each to check the typical life situations which are considered most important, most frequently met, and most difficult to meet successfully. Also request that any new situations be added which are considered of equal importance for the given pupils.

5. Obtain further ratings of these situations from adults representing the social and occupational groups which the pupils of the given classes are likely to enter. Continue these ratings until a perceptible agreement is reached in the situations checked.

6. Retain in the reconstructed course those topics from the original course for which the parallel situations are most frequently checked as important, frequent, and difficult. Eliminate

the other topics of the original course unless these are essential to the adequate presentation of the topics retained.

7. Supply such data not contained in the original course as will enable the pupil to deal with the parallel situations.

8. Organize the selected situations in problem form and in proper instructional order.

9. Arrange the data supplied together with the data retained from the original course with reference to the selected situations as thus organized.[1]

Admittedly such technique is a makeshift to be used as first aid and under conditions where and when a thoroughgoing piece of work is impossible or inadvisable. The disadvantages of functional-analysis enumerated above may prevent the construction of a program *de novo*. By content-analysis there can be some progress made toward reconstruction in the right direction and on sound principles, even though all that is desirable may not be accomplished. Such technique, however, to be even moderately successful must be thoroughly well-organized, carefully thought through, and conscientiously conducted.

Taken all in all, therefore, it may be said that programs of studies may be made for the high school (1) by tradition and retention of the *status quo*; (2) by legal enactment; (3) by personal judgment, or scissors-and-paste-pot construction, enforced as an official edict; (4) by a scientific attack upon the problem by all concerned according to the techniques involved in job-analysis, activity-analysis, functional-analysis, or content-analysis.

PRINCIPLES

For organizing the staff. It hardly needs to be said that the task of program-making in the modern high school is a coöperative enterprise. The magnitude of the project alone demands more time and energy than any one individual can

[1] D. Waples, "Techniques of Analysis in Constructing the Academic High School Course," in *Journal of Educational Research* (January, 1926), Vol. XIII, pp. 6–7.

command, even if there were not other reasons for such a joint effort. The teachers in the school are of course the most important members of this working body, but it usually is wise to enlist the coöperation of lay workers from the community and not have the project too purely professional. The head of the enterprise is the executive officer of the school, — that is, principal or superintendent, — upon whom at all times the official responsibility rests. In small schools no very elaborate organization of the coöperating staff is necessary, but in the high school of moderate size and larger a thoroughly well-planned organization is essential. Certain general principles governing such organization are evident as the result of several attempts to work out programs of studies on a coöperative basis. A set of such principles is suggested below, which, it must be recognized, are only suggestions and will have to be adapted to meet specific situations. The order in which these are presented has no necessary relation to the order in which the matter discussed should be taken up by the executive whose duty it is to think this entire problem through, plan the organization, and attend to its execution. At all times the officer in charge, be it the superintendent or the principal, or the person to whom such work has been delegated, must be the moving spirit, the guide, the counselor, but never the dictator, of the group engaged in the project.

The teachers as a whole must be convinced that a new program of studies is needed. This is undoubtedly the first step and may be accomplished through open discussion or through objective presentation of certain selected facts concerning the high-school situation secured from the work of the teachers themselves. This approach to the problem must be tactful, judicious, and convincing. The proposal to reorganize the program should not be presented as an order or as a demand, but should grow out of a realization by the staff of the vital need for it. To be sure, there will always be some individuals who will resent any proposal to do more than a

contract demands, but those with a true teaching spirit will welcome the opportunity to increase their own professional knowledge and at the same time aid in improving educational opportunity. First, then, *develop teacher morale*; "sell" the idea to the staff.

Perhaps a wise second step will be to arrange for a council, or cabinet, or set of advisers, which may be called a master committee. This master committee should state and define the problem, serve as a reviewing committee, have on hand and available such information as is necessary for the investigation, determine principles and details of procedure, direct the work of other committees, assemble and prepare the final report, and in general be the body in charge. Its functions, then, would be advisory, executive, legislative, and editorial in nature. In personnel it should be representative of both curricular and extra-curricular activities as well as of community interests, and might therefore well include one or more lay members from the community. It need not necessarily be made up of heads of departments, but may well be selected by the executive from a multiple list submitted by the members of the staff. It is highly essential that this committee be so constituted that it will work in harmony, be sane and open-minded, able to think clearly and completely through the problem, possessed of originality and initiative, determined but not dogmatic. Secondly, *secure a master committee.*

A third matter needing attention is to think out the details and provide for them. It will be necessary to have subcommittees enough to represent all school interests, scholastic and otherwise, and probably community interests also, in certain cases at least. Each subcommittee should be sponsored by the various departments but ought also to include members from closely related departments; for example, the subcommittee in science ought to include a member from the mathematics department, and vice versa. These subcommittees should serve as liaison officers between the master com-

mittee and the other various interests involved. In planning these details also the work must be definitely assigned, and in so far as possible emergencies must be provided for; for example, what shall be done in case of illness, who shall be held responsible, and so forth. Briefly, *perfect the internal organization of the project.*

It will be necessary to have great quantities of material and references assembled at one central place in charge of the master committee. The facts about the industrial, economic, social, educational, status of the community must be brought together. Information about pupil abilities, capacities, tendencies, achievement, and the like must be collected, tabulated, arranged for use. Reference books, textbooks, syllabi, practices in other places, results of research specialists, and so on through a long list ought to be made available as sources for information, suggestion, hint, inspiration, to the various committees and to the individuals. This is one of the largest as well as most necessary tasks to have performed, and it is the duty of the master committee to plan for, secure, and make available all this information, working of course through the various subcommittees. *Assemble at one central point the necessary information about the community and the individuals.*

Nor must the details of the entire investigation be allowed to hang at loose ends. Time limits for the completion of each unit of work must be set, each subcommittee must prepare and submit a definite plan and schedule of its work, the form and organization of reports must be unified and prepared; nothing must be left to chance. *Schedule the details of the entire project.*

Concurrently with all this planning and assembly of working material there must go on a campaign among the public at large to inform the community about this project. This is not only good policy, it is necessary in order to secure the information about community needs. Naturally this is the particular interest of the lay member or members of the master committee and demands the enlistment of the service

clubs, the parent-teachers' association, and such other community organizations as can be interested, as well as of teachers and pupils. Such a publicity campaign will be conducted through the school paper, the public press, assemblies, public meetings, organized speakers' bureau, and of course through personal work. The public has a right to participate in the enterprise, and it is its duty to do so. Complaints and objections can be met and the justice of them considered; novel features can be adopted and outworn material discarded with public approval — procedures which would otherwise be blocked or greatly delayed. *Enlist community support of the enterprise.*

When the program has been selected and arranged as a tentative scheme, it must be submitted to the authority charged with the duty of giving official sanction to the work of the school. It must be recognized as a tentative program, a working program only, and such an impression may be emphasized if it is presented in mimeographed form instead of printed. There will surely be necessary minor changes, which will appear almost immediately; and experience with the proposed program may reveal a necessity for wholesale readjustments. It is almost unthinkable that a first draft, however carefully worked out, will not demand many modifications as the program is put into practice. During this process of trial, however, the program should have the force of an official document. *Submit the tentative program for official sanction.*

The real test of what has been done comes with the attempt to put the program into practice. At least one year of organized experiment of the plan under truly experimental conditions with objectively measured results should be carried on before there should be any feeling of assurance that the program is ready to be stabilized. A much longer time than a single year is desirable, and it will be understood of course that the time will never come when variations, adaptations, slight modifications, will not be necessary as the result of continued experiment. All experimentation, particularly on the tentative program, should be as completely scientific in

technique as is possible; mere trial with observation and inferences is not a completely scientific technique, and such procedure is defensible in a program-making project only when true experiment is impossible. The essential features of such true experiment are accurately determined starting-points, equivalent groups, controlled conditions, and objective measurement of results. *Organize and carry on the experiment with the trial program.*

In the light of the results obtained from this experiment, which will be really a series, it will be necessary to modify the original plan. This is the work of the master committee, which will secure recommendations as well as results from the subcommittees, and presupposes that the evidence has been coöperatively gathered, carefully interpreted, and used as a basis for final decision as to the necessary changes to recommend. The changes, as determined by the master committee, are submitted to the executive for approval and are passed upon officially by the legally constituted committee or board. *Change the tentative program into a stable program as necessitated by the results of experiment.*

It is this final result which becomes the guide to teachers and pupils over a period of years, and for this reason it ought to be put into a more permanent form than mimeographed pages. Yet it must not be conceived that program-making ever ceases or that any body of material, however well selected and arranged, should remain fixed. Society changes, individual needs change, the body of knowledge changes, objectives are modified; these are program determinants, and hence the program of studies in high school needs constant modification and adjustment. After a thoroughgoing investigation, however, it is reasonable to suppose that only minor changes will be necessary, and so the results may well be presented in printed form. *Publish the program of studies.*

For selecting material. Such details of technique as are necessary for a more nearly scientific selection of materials

should be acquired in a specialized study of the problem. The general principles governing the selection of material can be very briefly stated:

1. Determine and validate the objectives — general and specific — to be attained.

2. Determine the activities necessary to attain these objectives.

3. Determine (1) the knowledge, (2) the skills, (3) the attitudes, necessary to carry on these activities.

4. Select such material as will (1) supply the necessary knowledge, (2) demand practice in the required skills, and (3) stimulate and develop the desired attitudes.

5. Select all material in the light of pupil status, — ability, tastes, ambitions, social background, vocational prospects, and the like.

6. Select material from life activities and particularly from those appropriate to the community in which the school is located.

7. Select material which shall make the program comprehensive in scope and varied in application.

Such general rules are applicable to the general problem of making a program, and particularly so to the more specialized problem of preparing a course; for example, in mathematics, in biology, in automobile-mechanics, and so on. They are a convenient epitome of technique for general guidance; they are not complete or detailed directions for selecting the subject matter of instruction.

For arranging material. Proceeding on the assumption that a group has selected topics, facts, data, problems, and so forth appropriate to the work of a high school, the principles for arranging such a body of material may be stated rather dogmatically as follows:

1. Arrange the selected material in a desirable and usable instructional order according to *courses*, with specific aims.

2. Organize courses, first, as (1) constants, — material which is required of all; (2) variables, — material which is

required as preparation for some special activity; (3) electives, — material desired for enjoyment, to supply deficiencies, to "round out" students.

3. Organize the courses, secondly, into *curricula*, each with a definite aim toward social progress and opportunity for individual expression.

4. Name the curricula as nearly as possible according to the characteristics of the goal each would strive to attain; that is, in terms of objectives and functions rather than of content.

5. Arrange curricula, and courses within them, in such a manner that the early secondary-school years shall provide for general exploration and for gradual opportunity, as well as incentive, for selection through the years of the secondary school.

6. Arrange the curricula in such a manner that (1) the constants shall be most worth while at the time taken and to the extent pursued; (2) the variables shall present only such material as is necessary to accomplish preparation for the differentiated activity; (3) an extensive list of electives shall be provided within all curricula, so that students may have a wide choice of material which makes some individual appeal.

Certain more specialized rules of procedure for arranging material in the junior schools and other rules in connection with the program for the senior schools are appropriate to a more detailed treatment in the field of school administration. In arranging material as well as in presenting it consideration must also be given to securing proper emphasis at appropriate times to the integrating and differentiating functions. These matters belong with other details concerning the problem of program-making and constitute a part of specialized training in the problems.

For administering the program. Principles of high-school administration as applied to the program of studies are many and varied. What ought to be done and what can be done do

not always correspond. At this point in the problem of the high-school program the human equation plays an important part, and arbitrary administration may defeat the whole purpose for which a program has been built up. Certain practices, — the results of experience, — and several external factors indicate a minimum set of principles which may be used as guides to the administration of high-school programs. In no sense are they to be interpreted as fixed or final but, on the contrary, as subject to modification and adaptation as circumstances demand. The statements below are an effort to express these principles as concisely as possible:

1. Demand for graduation the completion of a well-planned curriculum that has a total of not less than fifteen units in courses demanding preparation outside of class.

2. Diplomas of graduation should signalize entirely satisfactory completion of a curriculum.

3. Certificates of completion should be used to differentiate pupils who complete a curriculum with deficiencies of quality, continuity, and the like.

4. Diplomas of graduation may be considered as *quality awards*; certificates of completion may be considered as *quantity awards.*

5. Ample assistance and information should be provided to students as they make their choices of work and as they seek to make changes in such work.

6. Changes should be permitted, under proper restrictions, when the interests of pupils demand them.

In like manner the staff must be constantly on the alert to keep all courses and all material in them up to date and never to permit a deadly exact repetition of subject matter to characterize class work. These are matters concerned with professional alertness, but they refer directly to the program-making problem. A dead program is almost as bad as stereotyped methodology. Both are matters which demand constant vigilance to prevent.

Details concerning the application of these general techniques and principles of program-making are numerous and complex. Much yet remains to be done in this field before particularized principles can be drawn up and detailed statements made concerning the procedures to be followed in making a high-school program of studies. Only enough has been presented here to introduce the problem, to indicate trends in the movement, and to show the tendency toward a more objective treatment of the issues involved.

EXTRA-CURRICULAR ACTIVITIES

Definition. Extra-curricular activities are those activities in the program of studies which are not recognized as forming a part of the formal instruction offered in the organized curricula and courses. Their introduction into programs as a legitimate part of school work is the inevitable result of the expanded conception of high-school aims and functions, itself an unavoidable conclusion from the size and character of the high-school population in recent years. The possibilities in such activities as educative means have been neither fully realized nor fully appropriated. That they are complementary to the formal processes of instruction and that they do contribute positively and appreciably to the educative experiences of high-school life have been amply shown to the satisfaction of those who have had personal experience with such procedure. Such activities are particularly valuable in the efforts to realize the aims of the junior high school, but they should not be considered of less importance in the work of the senior high school and the junior college.

Fundamental conceptions. A summary of the thinking which has brought about extra-curricular activities as a vital part of high-school programs of studies may be illustrated by a series of dogmatic statements: (1) Education results only when there is activity on the part of the one being educated. (2) Knowledge about life is best gained through participation

in the activities of life. (3) Many life activities are not present in the subjects and courses of formal instruction. (4) Not all pupils respond to even such life activities as are found in formal subjects of study. (5) Education for social, ethical, and civic purposes demands participation in social, ethical, and civic situations rather than formal instruction about such situations. (6) School situations approximate life situations in scores of ways. (7) Activities of the school are life activities to the students. (8) Opportunity for richness of experience in life situations should be provided as an organic part of the high-school program. (9) Participation in the activities of school life provides a means not found in formal subjects of study by which to educate students about life activities. (10) These opportunities can best be provided through nonformal, extra-curricular activities.

Thus it comes about that today an organic part of secondary education is participation in social, athletic, ethical, civic, leisure-time, and other types of activity, nonformal and complementary to the activities of the organized curricula and courses. Being informal, such activities lack uniformity, — and rightly so. Likewise, they need careful direction and supervision, or they easily become overemphasized in the school program. Their informality must not be allowed to develop into license and disorderliness, nor should this informality be reduced to rigid or autocratic control.

Principles of administration. Consequently there are certain principles which should serve as guides for the introduction and administration of extra-curricular activities:

1. A perfectly clear-cut policy concerning such work must be determined upon, touching such matters as its aims, its functions, its relative importance, and so on; that is, its place in the scheme of secondary education.

2. The policy having been determined, a program of such activities must be drawn up, appropriate to the several types of students and student interests, taking into consideration the extra-school conditions as well as the curricular activities.

3. The responsibility for organizing, directing, administering such extra-curricular activities ought to be definitely placed, and either one teacher selected, the major portion of whose time and attention should be given to this work, or a small committee appointed for a like purpose. The plan of one activities-teacher as the executive officer of an activities-committee has been found to be very satisfactory.

4. Time for such activities must not be left to chance, but a definite period in the daily schedule must be set apart for them and be rigidly adhered to as the activities-period. The psychological effect of this definite assignment of time to such work develops in the students attitudes of dignity, seriousness, purpose, interest, reality.

5. The activities should be organized around group interests. This organization may well take the form of clubs. In this way subject-matter interests over and beyond class work may be stimulated and satisfied; for example, science clubs, foreign-language clubs, art clubs, and the like. Athletic clubs and teams will of course evolve. Student participation in the good government of the school may be centered in a student council and in home-room clubs. Vocation clubs, social clubs, out-of-school-interests clubs (scouts, Hi-Y, and so on), and clubs organized around individual hobbies all suggest the lines of direction for the organization of group interests.

6. It is hardly necessary to state that such groups or clubs should carry on their activities by orderly procedure; that is, by such rules and formality as are common and necessary in group action.

7. These scattered club activities should be focalized and centralized by means of the school assembly. Small-group consciousness may thus be expanded into recognition of common interests among varied groups.

8. Care should be exercised to balance extra-curricular activities with curricular activities. Students are inclined to overload their time and energies with these less formal experiences, and this tendency must be guarded against.

9. Above all, every precaution must be taken to prevent the development of an attitude among students, teachers, or community that these extra-curricular activities are a "side show." The educative purpose back of all this work must be always to the fore in the minds of those directing it, who must recognize that informal and incidental learning is a highly important part of the educative process.

Consideration of these matters makes up a most important part of the efforts to reorganize instructional material. Any school engaged upon a reconstruction of its program of studies should take due notice of the problems involved in extra-curricular activities; for they are organically a part of the secondary-school program, even if not often recognized as such. The program of studies must grow out of life, and school activities are life experiences to the boys and girls in school.

REFERENCES

ALLEN, C. R. The Instructor, the Man and the Job, pp. 37–114.

BAKER, J. H. Report of the Committee of Ten, pp. 3–59.

BOBBITT, F. How to make a Curriculum (entire book).

CHARTERS, W. W. Curriculum Construction, pp. 3–146.

CLEMENT, J. A. Curriculum Making in Secondary Schools, pp. 27–69, 240–251.

COX, P. W. L. Curriculum Adjustment in the Secondary School (entire book).

FOSTER, C. R. Extra-curricular Activities in the High School (entire book).

GUTHRIE, MARY G. "The Work of the Course of Study Committee of the Chicago Principals' Club," in *School and Society* (February 2, 1924), Vol. XIX, p. 132.

INGLIS, A. Rise of the High School in Massachusetts, pp. 71–148.

JOHNSON, F. W. The Administration and Supervision of the High School, pp. 150–196, 230–244, 321–338.

JUDD, C. H. Introduction to the Scientific Study of Education, pp. 113–126, 156–183, 197–211.

KINGSLEY, C. D. Cardinal Principles of Secondary Education, *United States Bureau of Education Bulletin No. 35*, 1918, pp. 11–16, 21–24, 27.

KYTE, G. C. "The Coöperative Development of a Course of Study," in *Educational Administration and Supervision*, Vol. IX (1923), p. 517.

MILLER, E. L. Report of the Committee on Curriculum. Third Yearbook of the National Association of Secondary School Principals, 1919.

NORTON, J. K. Keeping Pace with the Advancing Curriculum, *National Education Association Research Bulletin*, Vol. III, Nos. 4 and 5 (September and November, 1925).

PARKER, S. C. Methods of Teaching in High Schools, pp. 50–94.

STOUT, J. E. The Development of High School Curricula in the North Central States from 1860 to 1918 (entire monograph).

STRONG, E. K., and UHRBROCK, R. S. Job Analysis and the Curriculum, pp. 19–139.

THOMAS-TINDAL, EMMA V., and MYERS, JESSIE DUVAL. Junior High School Life (entire book).

WAPELS, D. "Technique of Analysis in Constructing the Academic High School Course," *Journal of Educational Research*, Vol. XIII (1926), pp. 1–10.

Fourteenth, Sixteenth, Seventeenth, Eighteenth, Nineteenth, Twentieth, Twenty-fourth Yearbooks of the National Society for the Study of Education.

CHAPTER V

THE PROCESS

DISCIPLINARY EDUCATION

Changes in psychological theory. As far as secondary education in the United States is concerned, psychological theory as applied to the process of education may be divided into two periods. The first period goes back to the very earliest times in America and covers the background of education as transmitted to America through European influences. The second period began with the discovery of the child as a determining factor in education, — for the secondary school, sometime after 1890. The preliminary work of Hall, the experimentation of Thorndike, and the educational philosophy of Dewey ushered in new ideas and attitudes as to the exact method by which a secondary-school pupil might be educated. These newer ideas of the educative process are distinctly American and are based upon experimentation in the field of education and upon objective measures of the results of instruction. The modern conception of how a pupil learns has survived twenty years of continual experimentation in school and laboratory and may now be said to have been demonstrated as true, and the period of its application to secondary-school practice may be considered to be at hand.

Our present laws of learning have been derived chiefly from fifty years of experimentation in the fields of structural, abnormal, genetic, and animal psychology and have been applied and verified during the last twenty-five years by thousands of experiments in the field of educational psychology. The development of the test and measurement program has brought confirmation of the newer ideas.

Yet many of our teachers and the great majority of our school-board members do not as yet grasp the significance of these new ideas. Our schools as administrated and our subject matter as organized contribute to the retention of the older ideas; hence many teachers, although acknowledging the truth of the new doctrine, practice the older psychology. The present reorganization of secondary education and the present ferment concerning curriculum construction are due to the spread of these newer ideas concerning the educative process.

From Aristotle's time to nearly the beginning of the twentieth century, psychology rested upon a rationalistic basis. Little was known of the nervous system: the importance of the mind as a factor in mental processes was much overemphasized. The science of psychology, if it might be called a science at this stage, depended upon deduction from *a priori* reasoning as a basis for theory, and upon introspection for confirmation of the theory. The net result of such procedure was some sort of faculty psychology.

Faculty psychology. According to faculty psychology the mind was divided into compartments, faculties, or powers, and all mental phenomena were explained as expressions of these faculties. Three general groupings, — intellect, feeling, and will, — were each further subdivided into innumerable mental traits such as attention, imagination, perception, memory, reason, and so on. Attention was conceived, for example, to depend upon will, and greater attention depended upon the exertion of more will-power. The power of observation was supposed to be trained by the natural sciences; this faculty, exercised in the realm of botany, for instance, became strengthened, and the pupil, when he had graduated and become an engineer, could use this trained observation in the field of engineering. This idea of mental strength in mental traits was conceived as analogous to the development of physical strength in a muscle through exercise. Just as lifting heavy weights developed physical

strength to be used in war or sports, so doing hard tasks developed mental strength; holding attention to a disagreeable lesson developed the power of attention, which was stored up in the faculty of attention for future use.

The fallacy of faculty psychology. The fallacy of faculty psychology is now generally admitted. Quoting Griffith, "Modern psychology knows nothing of faculty psychology"; and Inglis says, "With the rise of modern psychology, faculty psychology was relegated to the limbo of discarded absurdities." The following detailed refutation by Moore, of Princeton University, is also worth quoting:

> Modern scientific psychology, however, has rejected absolutely the entire faculty conception of the mind, and of mental science, and this, I think we can say, for three reasons:
>
> (1) The division of the mind into faculties is an artificial, not a natural, division — a grouping of psychical processes for convenience of study and exposition, not an actual division in substance or reality of the mind or soul. Modern psychology recognizes that whatever the mind may in its essential nature be, it works, normally at least, as a unit, not as a collection of faculties; that every momentary state of consciousness is at the same time a knowing, feeling, and willing state. . . .
>
> (2) The reference of the various individual processes to the appropriate faculties merely classifies them, but does not explain them. . . . Mental faculties are merely class names, then, not causes of forces, and we have no more justification for thinking of the faculty of perception, for example, as causing or producing individual perceptions than we have for thinking of the idea of "man" as causing or producing individual men.
>
> (3) Finally, the whole conception of faculties as causes or forces is a confusion of the empirical point of view with the metaphysical. The faculty theory involves the thought that in some way or other the mental faculties are more real — are more substantial or permanent — than the individual processes.[1]

It is difficult, if not impossible, to find a modern psychologist or writer on educational topics who is willing or able to present an argument for faculty psychology, yet our educa-

[1] Jared Sparks Moore, *The Foundations of Psychology*, pp. 13–14.

tional literature frequently contains pleas for the cultivation of the faculty of attention, of precision, of accuracy, — expressions that connote faculty psychology. We can teach habits of accuracy by being accurate in all things, — by practicing accuracy, — but to teach one subject in the curriculum as a drill in accuracy and to expect thereby to develop the faculty of accuracy in other things is to hark back to faculty psychology and to the disciplinary theory of education.

The theory of formal discipline. Out of faculty psychology grew the theory of formal discipline. This theory assumed that education was essentially a training and discipline of the mind. The chairman of the Committee of Ten, addressing the National Education Association in 1892, said: "It does not matter what subjects the child studies, so that he studies something thoroughly and in an observational method. If the method be right, it does not matter among the numerous subjects well fitted to develop this important faculty (attention) which he chooses or which is chosen for him." President Hadley of Yale carried this one step farther and declared in defense of Greek as a college subject, "The ideal college education seems to me to be one where a student learns things that he is not going to use in after life by methods that he is going to use."

The theory that the content of the subject matter should be subordinated to the primary purpose of training the mind constitutes the essence of the disciplinary theory. This theory arose when the subject matter of education became so vast that no one individual could master it. Selection then became based upon the amount of training for the mind offered by the various subjects. Secondary education has until recently in this country been considered preparatory, — usually preparatory for college, — and this conception has aided the disciplinary theory. Furthermore, secondary education has been considered cultural, and culture has been defined as nonvocational and nonapplied knowledge or skill. The ele-

mentary school, on the one hand, taught the fundamental skills, and the university, on the other hand, trained professionally; but the secondary school was left without any such clear-cut body of subject matter. In the earlier centuries the knowledge of Latin and modern foreign languages was essential for professional study; algebra and geometry were essential for the study of calculus and trigonometry in college; physics and chemistry were introductory to the sciences and necessary disciplines in the art of scientific thinking.

Modern investigations, however, have shown that admirable translations now exist for practically all classical literature; the great increase of material in English available in all college studies has made the use of modern foreign languages unnecessary except for the research student; and not more than 3 per cent of the students taking algebra in the ninth year are now destined to study calculus. As the traditional subject matter of secondary education became less useful, the idea that it was well to study this material for the purpose of disciplining the mind gained ground.

The position was taken that those subjects which presented complex difficulties and required sustained attention, — quite apart from interest in the subject matter, — and which inculcated regular habits or methodical procedure were the most desirable school subjects, whether or not useful or interesting. Two factors aided in making the disciplinary theory plausible. The Puritan ideal, which has had a tremendous influence upon the American public-school system, was based upon repression of all tendencies undesirable in an adult; and owing to the fact that the child was considered a piece of old Adam, the Puritan belief was that most of his natural tendencies had to be disciplined. The second factor was that secondary education was considered cultural. In America until recently, as in Europe even today, secondary education was devised for a leisure class. As Judd says, "It is too flippant a remark to say that the classical education of the clerical period became the fashion and that later generations were

afraid to be out of fashion, but something of this sort is what really happened." Hence the excuse for continuing classical education must be based upon a theory of discipline.

For the classicist this meant that the classical period of Greek and Roman civilization represented the highest achievement of the human race, and to identify oneself with this culture was the acme of erudition. For the scientist it was assumed that natural law underlying natural phenomena was identical for all phenomena and that a thorough understanding of natural law in any one science opened the door to an understanding of all nature. For the mathematician, training in method, — cold, calculating thinking, — was intended to develop a method that could be applied to all thought processes with equal success. In no case was the subject matter organized for use in everyday life, but rather organized as a logical whole, so that principles and underlying laws were illustrated by examples, exercises, and selections.

Many of the famous definitions of education are based upon this theory of the nature of the educative process. The purpose, or aim, of education has likewise often been stated in terms of the disciplinary conception. Because the school grew out of the Church either directly or indirectly, and because the latter has long conceived its mission as one of correction through disciplinary measures, one might be led to reason that this view is solely a religious theory of education. It is very interesting to note, however, that it was one of the famous and greatly admired scientists who gave us perhaps the best statement to be found in the English language describing an educated man in terms of the disciplinary theory. In one of his famous essays on education Huxley wrote:

> That man, I think, has had a liberal education who has been so trained in his youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic engine, with all its parts of equal strength, and in smooth working order; ready, like a steam engine, to be turned to any kind

of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or of art, to hate all vileness, and to respect others as himself.

Such a man and no other, I conceive, has had a liberal education; for he is, as completely as a man can be, in harmony with nature.

The disciplinary theory, further, has had the strategic position of requiring no change in the program of studies. It has had the further justification of success in the past. Proponents of the disciplinary theory have tended to point to the people who achieved greatness and to ascribe their greatness to the discipline encountered in school.

The answers to formal discipline. The fallacy of the disciplinary theory is nowhere more clearly shown than in this last statement. Schools have ever been selective agencies dropping out the less intelligent, for under the disciplinary theory only the most intelligent could persist in school. It is reasonable to suppose that intelligence, not discipline, was the cause of success. The great number of geniuses, from Shakespeare to the present time, who were self-educated after reacting unfavorably to school discipline, tends to prove the opposite contention. So long as the school was disciplinary it strove for conformity and tended to kill the creative instinct. The periods of the greatest discipline have been singularly free from great men. On the other hand, the Golden Age of Greece, the time of Cæsar Augustus, the Renaissance, and the present time all represent periods of revolt against the old formal discipline of the schools and coincide remarkably with the periods of great intellectual activity.

Psychological. The psychological refutation of the disciplinary theory is based upon several factors. First, it is not possible to discipline the faculties unless there are faculties to discipline. Modern investigation has found that the nervous

system is a tremendously complex instrument, all parts of which are interdependent and operating simultaneously. The mind occupies a far less important position than was formerly supposed. Many modern psychologists are by no means certain that the mind has any sort of activity solely by itself; the existence of a mental force or power in the mind itself is almost universally denied. If this be true, the old phrases of "storing up mental power," "strengthening the fiber of the mind," "discipline of the mental powers," and so on become inapplicable.

In the second place, many experiments in England, Germany, and America have tended to show that "raw" memory cannot be trained except very slightly. If an adult can remember eight digits as his normal capacity, even superb discipline in memory work will increase his capacity little or not at all. Attention similarly does not depend upon discipline. To force one's attention is to invite undue fatigue and mediocre work. Concentration against one's wishes is vastly inferior to concentration developed through interest, both in duration and in quality of work turned out. Judgment depends upon variety and accuracy of experience and may not be trained in absence of the matter to be judged. Good judgment in Greek or algebra does not mean good judgment in banking or building. As far as banking is concerned, training the judgment in algebra is not superior to training the judgment in football. Judgment cannot be abstracted from the things to be judged. For many years science was taught "to train the observation." The eye can focus on but one thing at a time, and does focus by shutting out all other images. To focus attention on plant life means a corresponding loss in another field. It is increasingly clear that one cannot by the observation of plant characteristics train the eye to observe human characteristics.

In the third place, human beings develop from within, and education is the process of aiding that development. The disciplinary theory took no note of individual differences but

subjected all to the same discipline. It concerned itself merely with regulating the responses. Modern psychology tells us that the stimulus is the important factor in learning and that he who controls the stimulus controls the responses almost automatically. Man possesses infinite powers which he never develops, and education is concerned with the stimulation of latent possibilities more than with training the faculties.

Philosophical. In the field of educational philosophy, a field dominated by John Dewey, we find little encouragement for the disciplinary theory. Dewey says, speaking of the harmonious development of all the powers of the individual as the objective of education:

> If this definition be taken independently of social relationship, we have no way of telling what is meant by any one of the terms employed. We do not know what power is; we do not know what development is; we do not know what harmony is . . . We need to know the social situation in which the individual will have to use ability to observe, recollect, imagine, and reason, in order to have any way of telling what a training of the mental powers actually means.[1]

Characterizing the disciplinary idea of education as "learning to read the dead languages, the deader the language the greater the reputation for learning," he states that education must be based upon a study of adolescent youth, and that "learning is a necessary incident to dealing with real situations." "To assume that the mind is adverse to learning is to assume that the digestive organs are adverse to food." "The first meaningless phrase, the first thing taken for granted without the pupil's seeing its meaning for himself, is the beginning of the ruin of judgment." "A child is not born with faculties to be disciplined, but with special impulses of action to be developed through their use in preserving and perfecting life in the social and physical conditions under which it goes on."

[1] J. Dewey, *Moral Principles in Education*, pp. 12–13. Used by permission of and by arrangement with Houghton Mifflin Company, the authorized publishers.

Dewey holds that the disciplinary theory, or theory of effort, as he calls it, has never been successful.

> While the theory of effort is always holding up to us a strong, vigorous personality as the outcome of its method of education, practically, we do not get such a character. We get either the narrow, bigoted man who is obstinate and irresponsible save in the line of his own preconceived aims and beliefs, or else a character dull, mechanical, unalert, because the vital juice of spontaneous interest has been squeezed out.[1]

Administrative. If we look at education from the administrative standpoint, we find little real worth in the disciplinary method, for it tends to perpetuate and enforce undesirable features in school administration. Education tends to become static; the subject matter tends to become formal and to become organized on the basis of what is easiest to teach. The disciplinary theory enforces and perpetuates these tendencies. Furthermore, as Dr. Eliot pointed out, many factors in education tend to level the human stock, to mechanize the process, and to proceed at lock step in a fashion quite unsuited to a democracy. The school has had overmuch of discipline, without the disciplinary method being formally applied to the teaching-process.

Social. Nor is the disciplinary method suited to the times. Secondary education is being reorganized because it has grown out of touch with modern life, for the world has progressed far more rapidly than secondary education has changed. Long ago Pestalozzi said that nature educated man for social relations and by means of social relations, but secondary education has been attempting to educate man for social relations by means of discipline in classical or theoretical material regardless of the nature of the individual, his purpose in life, or his future status in society. The American cosmopolitan high school is an institution for helping adolescent youth to lead a normal life under the best possible conditions. It is no longer

[1] J. Dewey, *Interest and Effort in Education*, p. 3. Used by permission of and by arrangement with Houghton Mifflin Company, the authorized publishers.

an institution for the inculcation of a culture by which its graduates may attain prestige through the acquisition of certain traditional subjects and thus achieve a certain "caste," or class. With the passing of the older aim of education should pass the method of its inculcation, — formal discipline.

To avoid misconception of the term "formal discipline," it is necessary here to state that education is admittedly "training," and that "practice" may be conceived as a form of discipline. Practicing playing the piano to learn to play the piano, practicing typewriting to learn to typewrite, practicing observation of plants to learn to know plants or flowers, are specific disciplines and are admitted by all as good educational procedures. Studying Greek, algebra, or science to develop the mental powers, studying Latin to develop a classical taste, studying any subject the use of which is not apparent, for the purpose of developing reasoning, imagination, observation, concentration, or other such mental powers is formal discipline.

The theory of transfer of training. The theory of formal discipline depends for its justification upon the theory of training. So long as secondary education was conceived of as "training" and as "preparation," some theory of transfer of training was necessary. It was obvious that civilization had become so complex and the body of existing knowledge had become so vast that the school as an institution had to find some basis for selection of subject matter, and this basis was clearly, if training was the objective, that material which offered the greatest transfer. It was argued that there was no such thing as specific discipline, for no two life situations were identical, and that there were valuable general abilities which could be developed by training in a specific field. Hence all training involved some transfer of training, and it was held that the more abstract and theoretical studies were superior for this purpose.

Throughout this period practically the same education was given to all high-school pupils. To fit individual differences

the attempt was made to keep the subject matter very general, for the more abstract the material the more the potentiality of transfer. Concentration, the power of sustained attention, was a quality in demand in all life situations. The subject that required the most sustained attention was thus the best medium of training and hence the best school subject. It was immaterial that the net result of this policy was to drive out of school all pupils who did not have in a considerable degree this power of sustained attention; it was immaterial that this raw power of sustained attention, like memory, was capable of very little improvement; it was immaterial that sustained attention depended largely upon interest in or knowledge of the subject matter studied; all these considerations, no doubt, limited the transfer, but infinitesimal transfer on a mental quality that entered into every mental operation would be the best asset that the pupil could receive from his education.

The mode of transfer. All through the first quarter of the twentieth century, while the fallacy of mental training held the attention of writers on secondary education, the mode of transfer of training was a topic of considerable interest. Until the beginning of the century transfer had been assumed to be intuitive and automatic. Experiments in psychology soon proved this to be a fallacy. In 1903 Thorndike expounded the *theory of identical elements*, and held that transfer of training is in proportion to the identical elements which exist between the school situation and the situation in which the pupil will later find himself. These identical elements are concerned with the mental processes, mental attitudes, ideals, or methods of work; identical elements in subject matter are of lesser importance. However, associations involving elementary facts of experience, such as color, number, length, and ideas of space, which are repeated again and again in different combinations, are sought for their transfer value. Judd held that *transfer depends upon generalization*, that it is not the *presence* of identical elements but the *discovery* of

these elements and hence of the general laws underlying the subject matter that is important. He felt too that there are "certain general habits such as concentration of attention and power of arranging and expressing ideas which carry over from one field to another." Inglis carried this idea one step farther and held that *transfer depends upon dissociation*:

> No two situations in life calling for action on the part of any individual are ever exactly alike in all respects. Hence training for an absolute fixed and specific reaction to any given situation is an impossible and valueless process. Strictly speaking there is no such thing as specific discipline. Fortunately for the economy of mental life and efficiency in behavior it is possible for the mind to select certain parts of any total situation and react to those parts with a minimum of attention to other parts of the total situation. Since such parts of total situations may be essentially the same it is possible to establish what in all important respects are specific situation-response connections, and hence it is possible to assign values to specific discipline. However, through this same characteristic of the human mind comes also the possibility of abstracting from a number of total specific situations, differing with respect to most of their constituent elements, any given element which may be common to all the total situations or a majority of them.[1]

Thus, for example, geometry should be taught, as the best disciplinary subject in concepts of number and space, and transfer of these concepts should be made by dissociating them from geometry and applying them *ad infinitum* to other situations in life. The Freudian psychology, with its emphasis upon the subconscious mind and its theory that nothing ever experienced is ever totally forgotten or without influence upon all subsequent life, postulates a mode of *transfer by means of the subconscious mind*. The study of human and animal behavior has brought out the importance of habit as a factor in the control of human action. Hence *transfer based upon the teaching of good habits* in methods of attack upon

[1] A. Inglis, *Principles of Secondary Education*, pp. 397–398. Used by permission of and by arrangement with Houghton Mifflin Company, the authorized publishers.

work, in maintaining a scientific attitude toward all things, in developing habits of attention, of concentration, of precision, and the like, have become the hope of the modern believer in transfer of training.

Scientific psychology has demonstrated that simple automatic habits and complex attitudes or ideals *may* be transferred. The pupil attacking a new situation tends to fall back upon habits and attitudes learned in previous situations, and to use methods of work which have proved successful in earlier attempts to solve difficulties. He has no other basis for attack; but he soon discards these methods and develops his own individual method, — adjusts his personality to the job in hand.

The futility of dependence upon transfer. The answer to the theory of transfer of training is that secondary education is not discipline, is not training, is not preparation for life, but, as Dewey has long maintained, is life itself. The theory of transfer and discipline was based upon the assumption that the teacher knew what the pupil should be and that it was his duty to make the child conform to the standards of the previous generation, to the standards of adult life, to the standards of college subject matter, or to some other artificial and external standard. It was a superficial method, for it attempted to direct human behavior without attempting to understand human nature. It was put on like a cloak, and often shed as easily as a cloak. It analyzed the subject matter instead of analyzing the human being. It made no attempt to understand life in the twentieth century, but attempted to prepare the high-school boy for life by teaching the same subjects that were taught a century ago, when the conditions of mental life in the community were vastly different. It justified this subject matter by theories of transfer and training that were never divorced completely from faculty psychology, even long after faculty psychology was admitted to be false.

The results of the disciplinary and transfer theories were disappointing. For example, Smith says, "Here, then, is the

dominating value of geometry, its value as an exercise in logic, as a means of mental training, as a discipline in habits of neatness, order, diligence and above all, of honesty." Yet algebra and geometry are precisely the subjects in high school most susceptible to cheating and, as taught, frequently give practice in dishonesty. Rugg found little transfer from geometry to other subjects of the logical thinking supposedly learned in geometry. Studies of the transfer of neatness, order, and diligence from one subject to another show little transfer unless transfer is consciously sought. However if a quality is consciously sought, it becomes the subject matter and is *taught* not *transferred.*

Harmful transfer of training. Few of the earlier writers on transfer of training say much about the possibility of harmful transfer of training, yet this very evidently is an important factor. Sixty of every hundred pupils who enter high school are eliminated before the end of the four years. The report of the Superintendent of Schools of Boston, Massachusetts, for 1925 states that 50 per cent of the pupils who dropped out during the year did so because of a distaste for school work. Few adherents of the theory of transfer of training take into consideration the psychological effect upon the pupil of working blindly. Certainly many of the pupils do not see the transferred values, and working stolidly in a routine manner, manipulating symbols, translating foreign language, demonstrating theory, believe that in accomplishing the small task in hand they are acquiring an education. It is almost pathetic to read the replies of high-school boys and girls to the question, Why are you studying Latin or algebra or physics? They honestly do not know, yet conscious purpose is the first desideratum in modern education.

Effect upon the program of studies. The educational process during the last few centuries has been founded upon the proposition that a unified program of the best achievements of the race should be given to all students alike. Attention has been directed toward arranging this body of materials

into well-organized units, classifying it according to the systematic development of the subject matter, presenting theoretical, general, and fundamental material first and following this by increased specialization. Attention has also been given to developing a well-worked-out technique of instruction for passing on this body of knowledge to the pupil. On the shelves of the library of Harvard University the textbooks used in secondary instruction are arranged in order of the date of publication. One can go back a century or two and follow the development of the technique of instruction as shown by improvement in the texts. A review of the Harvard College entrance examinations over a like period shows a progressive increase in the difficulty of these tests, correlating closely with the progressive increase in the efficiency of instruction. The rise in average age at which the pupil entered college shows a similar increase, — about two years in the last century. The materials from which these texts were compiled, however, show relatively little change.

Now all this material has been organized upon the static level: it looks backward toward the past. The problem of the present generation is to make this material dynamic: to look forward into the future for the purpose of seeing how this material is to function for the good of the individual and for the welfare of society. It is increasingly evident that to leave this matter of function to the haphazard possibility of transfer is to sacrifice it altogether. Between the years 1915 and 1922, as shown by the Reports of the United States Commissioner of Education, the number of pupils taking Latin decreased from 49 per cent of the total to 27 per cent; the number of pupils taking modern foreign languages decreased from 32 per cent to 27 per cent; algebra from 56 per cent to 40 per cent; geometry from 30 per cent to 22 per cent; physics from 14 per cent to 8 per cent; physical geography from 19 per cent to 4 per cent; zoölogy from 8 per cent to 1 per cent; botany from 16 per cent to 3 per cent; physiology from 15 per cent to 5 per cent. In fact, the only sub-

jects that were logically organized and taught according to the older technique and that increased were chemistry, which increased from 6 per cent to 7 per cent, and biology, which increased from 6 per cent to 8 per cent. Such facts may not, it is true, be conclusive evidence that the so-called disciplinary subjects have been unsatisfactory educational means; nevertheless they do show a tendency to demand of subject matter a justification more immediate and more defensible than the deferred and contingent values to be derived from the study of such subjects as a disciplinary measure.

Whether this body of material is to remain cultural or become practical and applied, one thing is certain: it needs to become functional, not to remain disciplinary. The progressive increase in the disciplinary character of this body of subject matter during the last century, as shown by the texts, together with the gradual increase in the application of the principle of election of studies to the student body of the high school and the relaxation of narrow college-entrance requirements, has produced a situation where the student must elect to discipline himself. Something more than the indefinite transfer values must now be offered to "sell" this subject matter to the student. The newer arts and crafts, music, and drawing, combining æsthetic sense with the activity and production of tangible results, have a strong appeal to the practical-minded youth of America. They present to him culture in terms which he can understand and the value of which he can appreciate. The reorganization of secondary education, which has been gradually gaining momentum since 1915, is distinctly away from disciplinary education, and the older cultural subjects will have to become functional or suffer further decline.

Summary. In summing up the question of transfer, the student of education who has followed the results of experiment as to the extent and permanence of transfer of training cannot but be impressed by the following facts: (1) Psychological experiments have not been able to show enough trans-

fer of training to measure easily. (2) Transfer of the "power to generalize" in a specific situation to the power to generalize in all situations is contrary to the laws controlling mental phenomena as we know them. The case is similar as to memory, attention, perception, observation, judgment, and the like. (3) Transfer of mental power has never been proved; even the existence of mental "power" is doubtful. (4) Transfer of habits and skills is not as extensive or permanent as at first believed. (5) Transfer is temporary, often extending little beyond orientation to a new subject. (6) Training narrows the field of activity. Transfer must necessarily, then, be positive, or the total effect will be harmful. (7) The present trend in education is away from dependence upon transfer of training in the intellectual field. (8) Transfer in the field of emotion is of unexpected power. This is not due to training, necessarily, for a single experience may attach a feeling of satisfaction or distaste to an act which may spread to a whole sphere of activity. (9) Transfer of training in the intellectual field has ignored the emotional effects aroused in the pupil by the process of training. Yet modern trend of opinion puts more value upon emotional drive than upon intellectual power.

FUNCTIONAL EDUCATION

Defined and characterized. A new age of humanism, a renaissance of interest in the human being, has recently come upon us. In contrast with the disciplinary conception of education there has come into being a conception of education which has been termed "functional." By this is meant that type of education which stresses the dynamic characteristics of students as manifested in organic relations with life rather than that which places emphasis upon a static body of knowledge which may or may not find expression in life situations, and this implies a recognition and utilization of adolescent possibilities, giving direction to activities rather than attempting to suppress or destroy them. Thomas Edison is

quoted as saying that it would be well if the inventors would quit work for fifty years, so that humanity would have an opportunity to catch up with material progress. Arthur Pound, in *The Iron Man*, has envisaged man as crushed under the mechanical contrivances of modern civilization, and H. G. Wells has said that modern life is witnessing a race between education and catastrophe. Now there is little doubt that the mental atmosphere which has brought about the reorganization of secondary education during the last generation was charged with this humanistic element, and thus it has arisen that human relations, — social behavior, — have become the center of attention.

Functional education starts with the pupil, his interests, abilities, and needs; and it considers these interests, abilities, and needs in connection with the community and its needs, mandates, and opportunities. This indeed demands a reorganization of secondary education, which for centuries has proceeded on a static level, being chiefly interested in the extant body of knowledge and the best way to drive these facts and laws into the mind of the pupil.

To start with the pupil and the community means that *the whole body of knowledge must be reorganized* in the light of how it is to function in the life of the student. The body of extant knowledge cannot be changed, but the approach and order in which it is given to the student can be varied. In the past, knowledge has been organized on a logical basis according to the needs of the subject matter; in the future it will be organized on a psychological basis, according to the needs, interests, and capacities of both the pupil and the community. How this may be done is considered in the chapter on the program of studies.

Furthermore, this requires that *coöperation* rather than authority be the principle upon which education is founded. The teacher attempts to do something with the pupil rather than to him. They both together work with home, State, Church, and business, learning efficient social relationships

and acquiring knowledge in as close proximity to actual community living as may be possible. It is neither necessary nor desirable for education to become withdrawn from life, nor to become a cloistered process, dealing only with first principles. Service to all the institutions of the community will redound to the benefit of the pupils, for it will furnish contacts through which education may increasingly function.

Pupil accounting and *community surveys* form the basis upon which reorganized secondary education must rest. Two factors, heredity and environment, blend in determining the educative progress of the individual; the former determines the method and amount, the latter determines the means. Education becomes a process of securing adjustment between environment and the capacity of the student. The tremendous waste of the man power of the nation through the failure of education to adjust its services to the inherited capacities of the pupils has resulted in the withdrawal from education of those pupils who most need education. From these school failures will be drawn the failures in vocational and social life, failures for which society must pay in terms of poverty, crime, and unhappiness. Thus analyses of the pupil population and of the opportunities and needs of the community become of prime importance.

Among the vital characteristics of functional education are variety and breadth. The narrow curricula of the old high school were not socially efficient; it was, and still is, good college-preparatory routine, but only one fifth of the entering high-school pupils are destined to go to college. For the remaining four fifths the subject matter is subservient to life interests; hence each individual should have the right to choose those subjects best suited to fit his individual case, and the responsibility rests upon the high school to provide suitable courses for the adjustment of the individual to the social and vocational life of the community.

It is obvious that the high school should give *guidance* to the pupil, and for this purpose should provide counselors, ad-

visers, or deans. Vocational guidance should help the pupil to discover his own capacities and interests. Educational guidance should then establish for him the best possible curriculum to fulfill his choice, nor should the door be closed to change suggested by developing interests. The school should maintain a placement office and not only should see to it that the leaving pupil gets a job suited to his talents but should follow him up with help and guidance until he is a vocational success.

Realizing that the majority of high-school pupils will have to face life by the time they are sixteen years of age, it should be the aim of the high school to provide sufficient practice in *self-control* so that the pupil may develop *initiative* and *responsibility*. It may readily be inferred from the program laid out for functional education that the chief object of such education is *character-building*, for the emphasis has been laid upon the optimum development of human nature. Self-respecting, self-reliant, active personalities are to be desired, — such as may become creators rather than conformists. Yet education should not be without its unifying influence, for there is no other institution in American life which can develop the unity of thought and ideals so necessary for a democracy.

The older education puts its faith in habits, and to that end developed discipline for school and studies; but the functional type of education puts its faith in *ideals* and right *attitudes* as well as in a broad, catholic understanding. Conduct is the immediate aim, especially efficient group conduct, but character is the ultimate resultant; hence no conduct, — either individual or social, — that is detrimental to character should be tolerated. Kilpatrick makes the point that to be moral the outward urge must conform to the inner urge. Thus any pattern of behavior which does not agree with the thinking and attitudes which constitute the student's normal response is morally destructive; yet much of disciplinary education is of this type.

Perhaps no better statement of the functional concept of education has ever been made than that made by the great scientist Tyndall:

> A pupil comes to us a bundle of inherited capacities and tendencies, labeled from the indefinite past to the indefinite future, and he makes his transit from the one to the other through the education of the present time. The object of education is, or ought to be, to provide wise exercise for his capacities, wise direction for his tendencies, and through this exercise and this direction to furnish his mind with such knowledge as may contribute to the usefulness, the beauty, and the nobleness of his life.

Thus *growth* is the fundamental tenet of modern education. The teacher is a guide and counselor to prevent blind-alley wanderings and socially inefficient attitudes; but, in the main, education consists of providing many and varied stimuli to rouse and develop the pupil. Classes are still too large, knowledge of the adolescent still too scanty, the administration of the school too rigid, the subject matter too far removed from life activities, to make this type of education as effective as could be wished. However, educational psychology is rapidly furnishing the necessary data upon which to build a scientific approach to education through generally accepted laws of learning, so that apparently the best opportunity for education exists where the best environment exists.

Applied to learning. *Contrasting aims.* The aims of education as they have evolved through the centuries have always carried with them corresponding changes in methods of education. The aims, viewed historically, may be represented as follows:

Plato: moral.
Socrates: dispel error; discover truth.
Aristotle: happiness through perfect virtue.
Luther: service to State and Church.
Spencer: preparation for complete living.
Herbart: many-sided interest; all-round development.

James: organization of acquired habits of conduct and tendencies of behavior.

Dewey: education is living; attending to present needs.

The present reorganization of secondary education is thus concerned with transition from the "preparation" idea of Luther, Spencer, and James to the "development" idea of Hegel, Herbart, and Dewey. Preparation means training, but development means socially efficient living.

Psychological bases. It is at this point that psychology comes in; for if development is the aim of education, it must be understood how children develop, how they learn. For centuries human beings had been studying themselves through introspection without marked success, so it became certain that psychology had to develop a more objective and scientific method before education could be based upon psychological findings. The first scientific approach was made in England about the middle of the last century, through the study of association. The truth was established that (1) man learns new facts by associating them with old facts. A study of structural psychology in Germany demonstrated that (2) sensations are irreducible units which come from the outside, enter the body through the senses, and cause a response. It was demonstrated that skills, like typewriting, could be learned so that a single stimulus sets off a chain of responses which are controlled in the nearest neurone connection; in fact, that (3) skill consists in reducing the action from the conscious to the unconscious level. Through a study of abnormal psychology it was established that (4) the emotions and the subconscious mind have a tremendous "emotional drive" which furnishes an energy for human actions. It was shown that emotion is largely a physiological phase of feeling, touched off by outside stimuli, and afterwards perceived by the brain; hence "we are afraid because we run away," — the so-called James-Lange theory. Functional psychology has yielded the largest returns to the laws of learning. The first approach was through a study of animals, which demon-

strated that (5) learning depends upon the conditioned reflex. If meat was held before a hungry dog, the saliva flowed from his mouth; if for a number of times a bell was struck at the same time that the meat was presented, and then the bell was struck without the meat being presented, it was found that the dog expected the meat and that the native attitude of eating had become attached to an extraneous object. Through the study of behavioristic psychology it was shown that an infant was not afraid of a rabbit but was afraid of a loud noise; if the two were presented to the baby together for the first time, the fear would become attached to the rabbit alone on the subsequent presentation. Thus (6) learning is made easy or difficult by attaching the right or wrong emotional drive to the thing to be learned.

A study of trial-and-error learning was first attempted with a cat in a cage. Modern psychological laboratories use rats and mazes for the same purpose, and these methods have produced certain laws which seem to be true with children. It was first noted that (7) practice depends for efficiency upon recency, frequency, and satisfaction with the results. It was also noted that (8) as long as no punishment was used, the activity of the individual was only limited by fatigue, but that punishment produces apathy; furthermore, (9) to produce any substantial activity at all, purpose is needed to start the individual working. Through the Gestalt theory it was found that (10) the learner tends to adopt patterns of behavior which have succeeded in the past.

Beginning about a generation ago the testing movement brought into use a more or less accurate yardstick with which to measure human beings and the results of learning. Although the 0 and the 100 mark can never be known, the discovery that (11) the normal probability curve is true of human characteristics, has made it possible to determine the 50 mark, and thus to measure traits and progress as well as to diagnose failure and to predict degree of success. Philosophy, sociology, economics, and other branches of learning

have also contributed much to our knowledge of the educative process, and in the light of these contributions as well as of those from the field of psychology the following laws of learning are cautiously advanced.

Formulation of the laws. 1. Learning takes place only in activity. This learning may be mental, emotional, or physical, positive or negative, but to be actual the learner has to participate. Thousands of stimuli are rained upon each individual from all sides all the time, but only those to which his senses react are of importance from the standpoint of learning. Mere exposure to learning is not enough. Learning is in proportion to activity, and desirable learning in proportion to desirable activity.

2. Both immediate and ultimate purposes must be known to the learner if learning is to be effective. Man is superior to animals chiefly in that he is able to evolve distant goals and cling to a purpose thus chosen. Unworthy and trivial goals are seductive of good education, but the whole-hearted embracement of a worthy goal, as pictured by Royce in *The Philosophy of Loyalty*, is the surest guaranty of a real education. Too often the learner takes the attitude of "tell me what to do and I will do it"; there can be achievement and production under such conditions, but there is little real education.

3. Speed is essential to good learning, but the learner should set the rate, or at least the rate should conform to his capacity. Most high-school pupils read more slowly than they should for the purpose of good comprehension; moreover, the faster readers comprehend and remember better. Education geared to a slower rate of progress than the pupil can make is unjust to the pupil. Nevertheless a conscious attempt to attain speed is inferior for learning purposes to an increase due to purpose, activity, and interest.

4. There are certain physiological limits to improvement which should be studied for each individual and each group. The first of these is inherited capacity, and it should be recog-

nized that this is no fault of the pupil. The second is the fatigue point, which depends upon capacity and interest; effort beyond this point is subject to the law of diminishing returns and is harmful to the individual. The third is the curve of learning or forgetting, which depends upon the native capacity of the pupil, upon practice and interest, and is usually characterized by sharp initial rise and daily fluctuations. Fourthly, the teacher must expect that every pupil will get on a "plateau" at some period of his work. It is here that the opportunity for teaching comes in, for new methods of attack or wise guidance into new interests is necessary.

5. Practice with satisfaction is the shortest road to permanent learning. Success is the most important factor in stamping in a learned response, for there is no human law more universally recognized than that man tends to do what has been successful in the past. Only when the goal is very desirable does failure spur the individual to greater success, and this situation seldom arises in high school. Practice with dissatisfaction (where the pupil does not see the use, where the teacher monopolizes the activity, where interest or purpose is lacking, where the attitude is wrong) is not only doomed to failure but is education in undesirable activity.

6. Coercion, founded upon the psychological factor of fear, is a poor motive force for education. We have inherited a school system in which grade, promotion, administration, and methods of teaching tend to emphasize unduly the factor of fear. Beyond the compulsory school age these crutches avail little and authority is of decreasing value as an incentive to good work. Especially does coercion develop a bad mind-set, a mental sabotage, a tendency toward deception, an attitude of condoning "anything that one can get away with," which is having a bad effect upon community life; nor is it efficient, compared to purposeful activity, as an educative *motif*. However, as long as there are immature pupils and mass education, there will have to be some authority and some coercion; but the attitude of coercion has been grossly overdone, so

that there has been produced less learning, less satisfaction in learning, and less desire to continue learning than there should have been.

7. Interest is the psychological factor upon which learning should be founded. Enlightened self-interest has the correct emotional drive. There is more discipline, more practice in overcoming obstacles, more concentration on the work in hand, more shutting out of thwarting influences, more practice in persistence, originality, initiative, and all the other virtues in the calendar, in following one's bent than there is in going against one's interests. Moreover, the secondary school, particularly, is the place where pupils will find their life interests, where they will explore themselves and the world. Required subjects should be at a minimum, and requirements within subjects should be as individual as is humanly possible.

8. Subject matter is primarily a means and only secondarily an end. Too many teachers stress achievement, or mastery of the subject matter, as the first, last, and only desideratum. Development of the pupil is the admitted aim of education but is difficult to measure; moreover, present ideas of schoolroom justice demand that the teacher give the best mark to the pupil who achieves most. We are now paying the price for the overemphasis on marks in our older system. The subject matter should be a flexible medium for group participation. Too rigid a course or curriculum is a disadvantage, but goals, objectives, aims, skills to be learned, and the like should be better defined than they have been in the past.

9. Subject matter should be presented as a problem. Foreign languages are probably an exception to this law, but even here more individual instruction emphasizes the problem attitude. The project method in shop and science, the research method in social science, the activity-production method in English, the individualized method in art, the mimeographed outline in typing, — all show the desirable trend toward presenting material in such a way as to challenge interest and provide for individual differences.

10. The act of learning is psychological rather than logical. The personality of the pupil, his attitudes, his purposes and interests, have more influence than logical modes of thought. Moreover, subject matter logically arranged necessitates the deductive mode of thinking, yet for the purpose of education this is distinctly inferior to inductive thinking. The order of learning, not the order in which we would arrange what we have learned, should dictate the arrangement of subject matter. In general it will adhere to the Pestalozzian order of beginning with the simple and proceeding gradually to the complex, yet it necessitates a general view of the whole range of the subject first; certainly the general principles and laws will be developed last.

11. The act should be learned the way it is going to be used. Whenever there is a technique, a skill, or a habit to be learned, it is essential to teach it exactly as it is to function. The testing movement has proved that much of the drill and exercise work of the older school was wasted effort, for it was too vague and general ever to become an automatic habit. Sharp, accurate practice every day of not much more than thirty minutes at a stretch seems to be the optimum period of practice.

12. Learning is more than an intellectual process. Disciplinary education more often found the emotions arrayed against it than on its side, but we are now coming to see that whatever psychical energy we can develop must be from the emotions. We also know that whatever is perceived through more than one sense is learned in more than one way; for just as two eyes permit us to see depth, so does learning based upon two approaches give greater understanding. Learning that does not result in change in character or added skill, or some useful thing or act, is not true learning, — it is mere scholastic activity.

13. Attitudes and ideals function only when practiced under all conditions. To learn accuracy and precision in connection with one subject but not to practice it elsewhere

is not to learn accuracy and precision in general. Six hours of good English in the classroom and eight hours of poor English on the streets leave a balance of practice in favor of poor English. One learns initiative by being allowed to start things, one learns responsibility by being given responsibility, one learns good citizenship by practicing good citizenship on all occasions, and one learns to be active by being active. The opposite is true: one learns to be dull in a dull classroom, one learns irresponsibility when no responsibilities are thrust upon one, one learns apathy where interest is lacking, one learns mediocrity where one's talents are not exercised.

14. Understanding and good judgment come from wide use under a great variety of conditions. A narrow curriculum cannot develop these most essential of all human virtues. The present development of extra-curricular activities and of social participation in the life of the school has brought much social understanding to the pupil, yet the school is too far removed from the essential economic and social life of the community. Further coöperation with all efficient social agencies would vitalize the school. Participation in community life, such, for example, as helping to test the milk supply of the city, is the only real way to develop real understanding and good judgment in regard to community life.

Place of the student. Consequently the influence of the pupil upon the control of the school is enlarged as he progresses through school, so that by the time he has arrived at the junior high school no small part of the responsibility for discipline and control of the school should rest upon his shoulders. Just how much that portion shall be must be determined by the extent of responsibility that has been placed upon him in his previous school, so that power should be adjusted to capacity to use power. The responsibility for success of the school will ultimately rest upon the faculty in any case, but the absence of arbitrary authority, except, like medicine, as a cure for abnormal conditions, is a conspicuous sign of a modern school. During the period of secondary education

social control, — self-discipline by the group, — becomes one of the attitudes which must be progressively assumed by the pupils. If the ultimate goal of education is character and self-control, it is self-evident that every possible opportunity to practice attitudes that are fundamental to character and self-control should be given to the student body. There is no greater field in which to practice initiative, responsibility, and courage than is offered by participation in the control of the school as well as in management of extra-curricular activities, but it is also evident that practice in dishonesty and other undesirable attitudes is very possible if the faculty does not bear its share of the responsibility for success. Democracy may be learned only by practice with satisfaction.

Applied to teaching. *Basic assumptions.* There is no legitimate place in a book upon principles of secondary education for treating the detailed methods of teaching the great variety of subject matter now offered in high schools. General principles of method no longer apply, and the disciplinary technique of teaching, worked out in connection with logically organized subject matter, is often erroneous. Each new teacher should be trained by actually participating, under supervision, in the teaching of the subject which is being prepared to teach. Methodology must be subordinated to the laws of learning, to the interests, needs, and capacities of the group to be taught, and to the probable functioning of the instruction in the life of the pupils and the community. There are, however, certain principles of teaching and of thinking which are of sufficient general interest to be included.

The problem approach. The primary purposes of teaching should be to develop student capacities for understanding and analyzing human and material relationships which are necessary to an insight into and control over environment, to secure an appreciation of the progress of civilization in its various aspects, and to develop those attitudes of thought and action which will make these capacities effective in the life of individuals. As has been previously stated, nearly all

school work can be profitably thrown into the problematic form, and thus provide for meeting student interests and purposes as well as offer a chance for the development of individual differences.

The desirability of the problem attack has long been recognized, but the earlier approach was entirely deductive in nature, as a study of textbooks written early in this century will confirm. The books explain the principle, the teacher is supposed to demonstrate and illustrate it; the class is supposed thus to learn how the principle works, and then to imitate and practice the steps by which the principle, or law, is applied. The procedure is entirely from the general to the particular, from the abstract to the concrete. The students react through imitation, and their interests are not engaged; the entire situation lacks vitality as well as stimulation. There is little if any opportunity presented by this old problem approach to realize upon the ultimate objectives of teaching as just stated.

The new conception of the problem approach proceeds from the inductive point of view, uses the scientific technique, and applies the Pestalozzian principles of teaching. The teacher first rouses the interest of the students in the whole field, not only because all-round development is an objective but also because it is very important to show how the subject is interwoven with the whole fabric of civilization. The more immediate bounds of the subject are then set, in order to delimit and clarify aims and purposes, and the teacher, out of more abundant experience and knowledge, formulates such general rules and suggestions as will prevent students from making the commonly expected errors or from following paths that are foredoomed to failure. It has been found wise too to discuss methodology and ascertain that the group understands various methods of attack, to encourage a tentative attitude toward method and readiness to adapt method to the exigencies of the case. If the matter has not been already thoroughly discussed, it is also wise to empha-

size the scientific attitude of mind and the principles of inductive reasoning, so that scientific thinking will be practiced consciously and understandingly.

Having thus built up a background, the new problem method tries to make it certain that purpose is known, that interest is aroused, and that an attitude of desiring to learn and to practice these modes of thinking and understanding is developed among the students. No general method of doing this can be outlined, for purpose and attitudes are developed in connection with the group as a whole or with individuals, but time spent at this point in the development of worthy goals, adopted and understood by the entire group, is time well spent. If the group are to work together on one piece of work, it becomes necessary to divide the work, and in general it is well to think in terms of "jobs" rather than in terms of pieces of work; for functional education should stress function rather than accomplishment, and a job cuts across subject matter in a fashion that is productive of life situations. Furthermore, the teacher under this method guides rather than represses the natural tendencies of students to choose the most glorious part, to let a few do all the work, and so on, for these are the real teaching and learning situations. This does not mean that such attitudes are overlooked or neglected, but rather are capitalized; for they are all-important, and progress in such social characteristics is very desirable. Student opinion, both individual and group, is sought, for where the teacher makes all the decisions out of hand the students are robbed of opportunities for practicing judgment, the responsibility is shifted to the teacher, and neither thought nor action is stimulated.

High-school teaching is the art of handling adolescent human beings, and the high-school teacher needs to know much about the value of publicity as a stimulus to greater and better effort; how competition can be developed between individuals and groups; how to build up devices for seeing that some success attends the efforts of even the lowest

member of the group; how coöperation can be fostered; how criticism can be given so as to incite to greater activity, and so on; in short, the teacher needs psychology, both group and individual, as a first desideratum.

Controls of thought. Ever since the days of Francis Bacon, education has relied, in an ever-increasing degree, upon the inductive mode of thought; and in so far as the curriculum of the high school becomes less formalized, the dependence upon this mode of scientific thinking will be increased. Modern educational methodology and thinking owe much to Pestalozzi, who tried to get children to observe what was going on in the world around them, to get clear impressions, to think out meanings, and to reason carefully. He considered attitudes and interest a century before the rest of the world adopted these things as educational objectives, and he urged the importance of educating through real things and real situations. For teaching he formulated four simple rules of procedure:

1. Begin with the near and proceed to the remote.
2. Begin with the simple and proceed to the complex.
3. Begin with the concrete and proceed to the abstract.
4. Begin with the known and proceed to the unknown.

Herbart believed that the start should be made with what the pupils know of the subject in hand. These ideas should be clarified and supplemented by the teacher, who also should bring in new ideas. These concepts should then be associated with the previous work and the pupils' world, classified and related to other fields of knowledge. The ideas should then be generalized and applied. While the Herbartian steps have become formalized and often restrict rather than liberate thought, they are useful as general aids to organization of thought, if used informally. As generally stated, they are

1. Preparation.
2. Presentation.
3. Comparison and abstraction.
4. Generalization.
5. Application.

McMurry saw in the schools a great need for better mental attitudes and methods of work. He felt, and rightly, that students were using poor modes of thinking and that one of the most important things for the school to do was to teach how to study. Consequently he offered the following steps:

1. Provide for specific purposes.
2. Supplement the thought.
3. Organize the ideas.
4. Judge the soundness and general worth of the statements.
5. Memorize.
6. Use the ideas.
7. Revise; provide for a tentative rather than a fixed attitude toward knowledge.

The following steps to a complete act of thought are taken from Kilpatrick's *Foundations of Method.* They are more dynamic than those outlined by McMurry, are more suited to the activity basis toward which modern education is tending, and are therefore a better guide for motivated education.

1. A situation arouses an impulse or tendency to pursue a certain course of action.
2. A difficulty appears; how to continue the given course is not known; there is no appropriate way of responding known or immediately available.
3. An examination of the situation is made to locate and define the difficulty more precisely.
4. Suggested solutions arise; hypotheses are formed, behavior patterns are suggested.
5. Implications (one or more) are drawn from each suggested solution, each hypothesis.
6. Actual test is made to see whether the deducted implications hold.
7. A solution is accepted in the light of the tests made.[1]

All these are generalized and summarized statements of the inductive procedure in thinking and teaching. They are therefore only guideposts, — not detailed road maps. Adap-

[1] From W. H. Kilpatrick's *Foundations of Method*, p. 242. By permission of The Macmillan Company, publishers.

tations have to be made to suit individual cases and particular situations. They are to be considered as convenient points of reference.

Controls of action and reaction. Modern psychological investigation has tended to limit the word "habit" to automatic habits and to distinguish clearly between habit and attitude. An habitual act is one that has been learned so that it is performed without coming into the focus of attention; for example, walking, playing the piano, typewriting, and the like. All call for a multitude of complex motor adjustments that have been painfully learned but come to be performed automatically. Attitudes, on the other hand, are flexible mental adjustments that consciously guide motor action. It used to be considered that development of precision in automatic habits carried with it the attitude of precision in other things, but no experimental evidence of this has been found.

Automatic habits can best be developed by drill, with as little thinking about the action, once the best method has been determined upon, as possible. Repetition of exactly the same act in exactly the same way shortens the practice period, and it has been found best not to subdivide the whole act and learn it piecemeal but to learn the whole process just as it is to function. It is particularly necessary to watch for the fatigue point and stop practice there, for practice while under strain is of little utility; hence several short practice periods are better than one long one. Automatic habits sometimes are subject to hierarchies of habits, in which case the lower order of habits have to be consolidated before the highest order can be learned.

Attitudes may be divided into two kinds: the subconscious attitudes and the conscious attitudes. Psychiatry and psychopathology have unearthed many mental attitudes which pupils are likely to hold unconsciously, — such as an inferiority complex, the conquering-hero attitude, rationalization, defense reaction, and so on. Few of these are serious enough to merit medical attention, and then the only remedy is re-

education, but the importance of these attitudes to the teacher is becoming increasingly well understood. For most of these attitudes, to be able to recognize them is to be able to see the cure, and most problems of discipline in school can be solved by a scientific analysis of the attitude of the pupil toward his life situation. Mental hygiene is becoming of increased importance in school work; for complex city conditions, long school hours, large schools, and specialized subject matter have all conspired to add mental strain to the pupil's load, so that there are many evidences of mental injury due to overstimulation or weakened mental attitudes.

Conscious attitudes and ideals are the ultimate desiderata of an education, for they represent continuous goals and are a determining force in nearly every act. It is extremely important, for example, to have students understand that secondary education does not consist only in securing satisfactory grades for fifteen units of subject matter, but as well in attaining poise, breadth of vision, versatility, dependable character, and similar functional attitudes toward life. The school, for its own convenience, measures education in terms of grades and achievement, but the pupil should know that he will be measured in the world by the attitudes he has developed rather than by the subjects he has achieved; for with the spread of universal education the prestige of graduation is much diminished and furnishes little more than orientation to adult life. Hence the development of a normal personality, — one with good emotional control, one which has achieved the ability to concentrate on the thing in hand and has learned how to think steadily and easily, one which has an active attitude in the face of difficulties, one which has achieved success and expects success, and one which has normal social relationships, — is the objective which the student should set for himself. Attitudes such as these cannot be grafted on from without but must be developed from within; they are established only when the inner personality corresponds to outward acts.

The United States, arising from frontier conditions, is admittedly deficient in æsthetics, yet much of the inner satisfaction of life comes from the pursuit of a satisfying and worthy avocation. Education under an aristocratic ideal has always pursued culture to the exclusion of the practical and applied arts, but there is genuine danger that democracy will become unduly materialistic unless its secondary schools offer culture in terms that the secondary-school population can appreciate; for example, music, horticulture, stage-scenery painting, handicraft in metals and plastic materials, and so forth. It is also evident that the object of these classes is self-expression, the pursuit of the individual bent, and that the process needs to be liberalized and freed from formality; also that this tendency should carry over into other academic subjects as well. In English, for example, too much of the composition has been formal, destined for the wastebasket when the training it afforded has been accomplished. There have been too many routine tasks required that are not worthy ends in themselves but must be justified on the basis of mental discipline; consequently it needs to be emphasized that school tasks should everywhere become more worth while in themselves and never be without some æsthetic value.

Place of the teacher. The place of the teacher in instruction has tended to change radically. Instead of monopolizing the activity or training the pupil or giving information or instruction, in place of standing before the class as a symbol of authority with the implied or expressed coercion of learning or discipline in the background, instead of driving the class along at the fastest possible pace the group can maintain without too many laggards attracting the attention of the superior officers, instead of reducing the task of teaching to a mechanical activity, the modern teacher has to become a director of education. His position is largely that of guide and counselor, so his authority depends largely upon his ability to furnish the necessary aid, inspiration, and advice when called upon; hence versatility, enthusiasm, coöpera-

tiveness, vigor, and tact are of special importance as personal characteristics. Since he needs to know his subject matter in its functional aspects, that teacher who has practiced his subject in the give and take of the vocational world is much more likely to succeed than the one who knows it only from the theoretical side. No modern teacher should fail to establish functional relationships between the subject matter which he teaches and the life of the community in which the school is established, for otherwise both he and his subject matter will progressively fail to function.

Applied to methods. *The point of view.* Just as life orders its existence by numerous and flexible modes of procedure and adapts the process of living to multifarious influences by a variety of methods of adjustment, so must that education which is known as functional, in striving to attain its ends, adopt and utilize all available and tried modes of education. No one universal method is possible or desirable, for no one method can produce the variety and breadth of treatment which must be a characteristic of the new education; and any one method, however profitable in the beginning, becomes stale, flat, and unprofitable when it is pursued to the point of becoming formalized for either teacher or student. The wise teacher will know all methods, use all methods (each in its proper time and place), and will freely adapt method to student, group, or situation.

The various types. The *lecture method,* so much overworked in college, is not properly utilized to its fullest value in high school. Its proper place in by far the great majority of cases is at the end of a unit of instruction. Too often the instructor uses the lecture for the introduction to new subject matter, but this is to go back to the deductive method; rather, it is better to start with experimentation, follow with discussion, and use the lecture method as a means of tying together all the empirically derived principles into a harmonious whole. The lecture method is *par excellence* the method of giving information, but information is not now the primary purpose

of secondary education; moreover, since it is better for the student to find his own information, the lecture comes to be a means of clarifying and organizing into generalized wholes the ideas that students have developed individually, and so it becomes a method of clarifying understanding rather than of giving information.

The *textbook method* has been as much overworked in the secondary school as the lecture method in the college. While the aim of the high school was preparation for college, while the entrance requirements were rather rigid, and while the method was disciplinary, textbooks furnished the condensed pabulum necessary for the pupil; but now that the colleges require for entrance little more than demonstrated ability to do the work, the development of the pupil rather than the learning of what is in the textbook comes to be the end sought, even in the college-preparatory curricula. Thus the slavish following of the text is unnecessary and often harmful; on the contrary the text becomes an outline of the extent of the work, the boundaries and goals to be attained, but does not in any sense dictate the method to be followed in arriving at that goal. Hence the best modern text is an outline or syllabus which clearly indicates the field to be covered, the topics to be discussed, the essential grouping and interrelation of topics, — in short, is a skeleton upon which to build a personally organic body of knowledge.

The *laboratory method* came into the schools as a means by which the teacher could demonstrate to the class a particular process to be taught, thus utilizing wider sensory impressions than was possible under the textbook method. It has remained upon this level in most foreign secondary schools, but even our more conservative American high schools have tended to put the apparatus into the hands of the secondary-school student and thus allow him to demonstrate the process to himself. Even this method, however, is not on the best level of achievement, for all are performing the same experiment at the same time under rather formal conditions for the

purpose of acquiring information. Moreover, this method does not adhere closely to the method in use in the world; for the old laboratory method tends to start with the law, and then the experiment tends to degenerate into mere demonstration of what is already known. On the other hand, the newer laboratory method starts with the actual object or situation as presented in life, then works back to the law which controls its operation.

This new method in laboratory work may well be called the *research method* and is applicable to nearly all high-school subjects where understanding rather than skill or technique is the ultimate aim. It requires that the life situation be faced first. This may be the preparation of an editorial for the school paper, the measurement of the height of a tree, the question of enforcing the prohibition law, the task of analyzing sugar or of repairing an automobile. The first step is to understand the situation as a whole: use, importance, application, bearing on life, and especially *why* it is being studied. The second step is to analyze *how* this life situation is made, composed, done, or has come into existence. The third step is to *organize* and *classify* the principles underlying the situation, and these should be written down, so that they can be displayed to the other members of the class. Fourthly, the *application* of these principles to other fields may be made either by further investigation or by further research. This method has been in use in the elementary school in simple form, and is the usual scientific method that will be followed in the university and in life; hence the method will not be difficult to apply, will grow out of a present life situation, will be applicable as preparation, and will be in the highest sense functional.

The *project method* is similar to the preceding method in some respects, but starts from a different point. While in the research method the emphasis is upon understanding, here the emphasis is upon production of something worth while; consequently it is necessary for the pupil to have a desire or

purpose to produce something before he can begin. Hence the first step is to find out what he wants to do. If it is to be a group project, considerable time is needed to find a project that is possible under the limitations of time, space, and equipment at the disposal of the group, for most high schools, even if they have fine buildings, are very limited as to functional equipment; four bare walls, a box of chalk, a uniform text, and a pointer are not sufficient equipment for teaching by the project method. Stevenson sets up four criteria for the project method: (1) a project should emphasize reasoning as against mere memory of information, (2) conduct is the end sought rather than information for its own sake, (3) a natural setting for learning must be obtained, (4) the priority of the problem should take precedence over the principles. Until these conditions have been obtained, there can be no project. The next thing to do is to get to work, for it is essential to strike while the iron is hot, and to keep going at a good pace, or interest will lag. Interest and activity are the essential elements in this process of "learning by doing," and truly marvelous accomplishments can be achieved when attended by publicity. Dramatics, orchestra, and running a school paper are examples of fruitful fields for group projects, while agriculture, arts and crafts, shopwork, and drawing provide suitable fields for individual projects.

That ideas and ideals are of great importance in education few will deny; that they are fostered by discussion is equally accepted; that they do not become functional until practiced is also apparently true. Hence the *discussion method* which culminates in activity is especially educative. Ideas are born with individuals, but reach maturity only when they have been verified and corrected by contact with other minds. Leaders in all walks of life are people who have ideas and are able to adjust them to functions or circumstances; hence the opportunity to practice this activity should be given to students. Extra-curricular activities have long been a fertile field, but more recently English and the social studies have

adopted this method to motivate the work. However, it ought to be said at once that scholasticism proved that education does not consist in mere intellectual activity, so that, without use of the ideas developed, without some point to the discussion, without some decision being made, mere dilettantism is being fostered by discussion. In both English and the social studies it is important for the group to investigate, discuss, and decide what is true and what is false, what is useful and what is inapplicable; and the nearer to the everyday life of the student these discussions are kept the greater the possibility that the ideas will function and that serviceable ideals will be formed.

Individual instruction is undoubtedly the goal of modern educational method. Division of pupils into homogeneous groups on the basis of age, grade, intelligence, or subject matter is but a method of arranging the best possible groups for the teacher to handle. Textbooks and courses of study are too often arranged with the mass-instruction, the-same-amount-in-the-same-way-to-each-individual, idea as the basic point of view; buildings, size of rooms, and lack of mobile equipment all imply the same ideal. Many school executives, brought up in the old school and long practiced in its methods, can hardly visualize just what the modern teacher is attempting to do; hence the path of the teacher who would use individual developmental methods is not strewn with roses. Too often the teacher, under the routine engendered by mass instruction, becomes apathetic and lifeless toward himself, his pupils, and the world in general; as the teacher is the focal point in instruction, education becomes equally dull and lifeless.

Evaluated. Thus it comes about that the new type of education known as functional, approaching its problem, as it does, with the point of view of the individual student in mind, finds itself confronted with the task of discovering and utilizing its material, not in departmentalized fields of human knowledge but in the intricacies of human activities. In

like manner it is unable to select for itself any one uniform and universal method of presentation, for all methods have their places and times, some being good for one type of student while others may be better for another type, some being suitable at one time but inappropriate at another. So also the learning-process as functional is not mere acquisition of facts, nor is it study for the correction of defects in the individual, nor is it an attempt to build up general powers and "faculties" which may be applicable in specific situations; it is rather a process of stimulating tendencies, capacities, tastes, and so on, already present, into growth and of helping them to find positive relationships to life.

REFERENCES

ADAMS, J. The Evolution of Educational Theory, pp. 186–228, 283–309.

BAGLEY, W. C. Determinism in Education, pp. 11–46.

BUCKINGHAM, B. R. Research for Teachers, pp. 1–72.

BURTON, W. H. Supervision and the Improvement of Teaching, pp. 53–130.

CHAPMAN, J. C., and COUNTS, G. S. Principles of Education, pp. 55–172.

CLEMENT, J. A. Principles and Practices of Secondary Education, pp. 69–114.

DEWEY, J. How We Think, pp. 45–67, 145–169.

DEWEY, J. Interest and Effort in Education (entire book).

GATES, A. I. Psychology for Students of Education, pp. 281–369.

KILPATRICK, W. H. Foundations of Method (entire book).

KILPATRICK, W. H. Source Book in the Philosophy of Education, pp. 185–208, 270–278, 298–321.

MORRISON, H. C. The Practice of Teaching in the Secondary School, pp. 3–78.

OGDEN, R. M. Psychology and Education, pp. 326–355.

PARKER, S. C. Methods of Teaching in High Schools, pp. 314–361, 391–435.

PECHSTEIN, L. A., and MCGREGOR, A. L. Psychology of the Junior High School Pupil, pp. 48–125.

THORNDIKE, E. L. Educational Psychology (Briefer Course), pp. 331–422.

WOODWORTH, R. S. Psychology — A Study of Mental Life, pp. 244–385.

CHAPTER VI

THE SYSTEM

BASES OF DIFFERENTIATION

The problem stated. There having been established in the United States by the last quarter of the nineteenth century a system of public education, national in scope and embracing an elementary, a secondary, and a higher unit arranged in sequential order, the problem of internal organization, of articulation between the parts, of relations and interrelations, constantly recurred and remains today a problem of public education. Since secondary education, and the high school in particular, constitutes the middle division of the complete system, it is impossible to treat it other than in its relation to the divisions above and below. Its own internal organization is a separate problem and needs to be treated as such. The immediate question has reference to the differentiations which have existed, do exist, and should exist between the high school, on the one hand, and the elementary school and the college, respectively, on the other. The great number and variety of influences which have been at work make the situation a complicated one, both to describe and to understand, but one which is becoming clearer as a body of sound principles has evolved, upon which to build a set of practices. A knowledge of the stages in its evolution is necessary to an understanding of the present conditions.

Social status. The distinction between the sections, or divisions, of the system has had as one basis the social status of the pupils attending. The elementary, or "common," school of colonial days was the school for the ordinary people. The grammar school was intended for a more select class, the

group out of which it was to be expected the leaders in Church and State would come. The college was organized and conducted for the benefit of the élite of this more select class and was considered the school in which the very uppermost stratum of colonial society would be trained. As the colonies developed and prospered, there came into being a middle class of merchants and tradespeople, and the academy had its origin in the demand for a school to meet their needs. No one type could meet the variety of needs, however, and so strata within the stratum arose and finally came to include the group of aristocrats who had been the patrons and supporters of the grammar schools. The common schools remained the institution for ordinary folks, and the colleges became the storehouses of culture for an exclusive set. The high school came about as an instrument to provide further education for the common people and thus began the dissolution of social barriers between types of institution. Social distinctions could not serve to mark off levels of school organization in a nation which had committed itself to a policy of equal rights and opportunities without regard to artificial distinctions. It is probably true that at present a large proportion of high-school students come from homes of the professional and skilled workers in the nation. Whether this is the result of an artificial or of a natural selection remains to be proved. Certain present-day writers on educational matters, particularly as concerns theories of curricula and methods, have so worded their ideas as to give an impression that they think of elementary schools as a place for the children of the common people, of secondary schools as the place intended for a more select group, and of the college as a place intended for the most privileged class, these stratifications to be made on some external artificial basis. There is a body of truth in the conception of an intellectual hierarchy, but the lines of demarcation by no means correspond to any social or occupational hierarchy, and the concept certainly does not provide any usable criteria by which to distinguish and differen-

tiate between elementary, secondary, and higher divisions in the organization of public education. So far as the high schools themselves are concerned, they make no distinctions of social status or class standing; their effort is to provide the opportunity without regard to such considerations, even as do the elementary schools and the state universities. Social status is not at least a conscious and intended basis of differentiation between the parts of the national system of public education in the United States. A system of organization by which schools are differentiated on the basis of social class lines has not proved to be a satisfactory measure by which to provide an equality of educational opportunity and to develop the spirit of democracy.

Studies pursued. A second basis upon which it has been thought possible and desirable to distinguish between the parts of the public-school system has been that of subjects pursued by the pupils. So long as pupils studied the so-called "rudiments" they were in the common school, or the primary school; that is to say, in the lower division of the system. Under the college influence certain subjects came to be considered preparatory and, later, disciplinary. Pupils who advanced to these studies came to be classed in the academic division, or preparatory division, and, later, the high-school division. So it came about that the distinction between the lower and the middle division of the school system was made on the basis of subjects. In like manner the college came to consider that it had a distinct body of subject matter which belonged to it, and did much toward assisting the academies and the high schools to separate secondary-school subjects from those of college grade. Some of the earlier colleges, and a few even at the present time, conduct preparatory departments in connection with their other work. In practically all cases the chief distinction between the academic section and the collegiate section of such institutions is the one of subjects studied. Even within the strictly college years themselves a distinction is sometimes made between upper and

lower division in terms at least partly based on subject matter. When the Committee of Ten began its work in 1892 it found an immense amount of confusion, in practice at least, between the three grades of institution as to the subject matter appropriated to each. One result of the work of this famous committee has been to crystallize a practice of distinguishing between elementary, secondary, and college (or higher) education on the basis of the subjects studied by the pupils in each institution. Twenty years after the work of this committee the United States Bureau of Education defined a secondary student as one "who has completed an elementary school course of at least seven years in length (ordinarily eight years) or its equivalent, and has pursued within the past year at least two recognized high school studies, e.g., Latin, French, German, algebra, geometry, physical geography, physics, general history."[1] Such a basis of differentiation when carried out in its entirety and when based upon an arbitrary and logical classification of human knowledge is rigid and inflexible, making adjustments difficult, and hence one cause of poor articulation between the parts of the system. If the end of the educative process is only knowledge-getting and knowledge-storing, then an organization based upon the logical connections existing between the bodies of human knowledge will perhaps best realize the end in view. The trend of present-day thought about the purposes of schools is broader and more inclusive, and hence other bases of differentiation have appeared.

Age of pupils. At various times and in many places throughout the development of the public-school system in the United States pupil age has been used as a basis for differentiating between the divisions in educational organization. At first, and for many years, the chronological age of pupils served to define their status. Many of the states today have laws concerning education which force the continuance of this basis of differentiation. Many of the early studies on pupil attend-

[1] *United States Bureau of Education Bulletin No. 22*, 1912, p. 5.

ance, elimination, and so on were based on the assumption that pupils would enter the elementary school at six years of age, move annually one grade, and complete the elementary school at fourteen years of age. Official reports and state laws, often in the past and to some extent at the present time, consider and state school age to be from six to eighteen, or five to seventeen, and the like, as may be determined. An examination of the age-grade census of any school system will make it evident that while a short age-range will include the majority of pupils in any given grade it will take a wide and extensive age-range to include all the pupils in any given grade. It is a convenient but not a scientifically determined basis upon which to differentiate between the steps of the system.

Supplementary to this chronological-age basis has been the adoption of physiological or psychological age. The culture-epoch and the recapitulation theories of development gave a tremendous impetus to the idea; and the periods of infancy, childhood, puberty, adolescence, and so forth, as well as of immature, maturing, and matured life, served, often in conjunction with chronological age, as bases for differentiation of periods in school life. Of course if it can be assumed that the periods of development are uniform, sharp, distinct, abrupt, and determinable, the arrangement of a school system in accordance therewith would be an entirely proper and defensible procedure. Evidence of convincing nature concerning these points is, however, lacking; on the contrary, evidence is increasing to make it certain that development is not periodic but gradual. Hence the division of a system in accordance with so-called periodic changes finds decreasing favor. It is true that the boys and girls in the elementary schools taken as a whole do not manifest the characteristics which we have come to associate with adolescence. The same fact is true of many boys and girls now in high schools. In like manner there are some college students who manifest more decidedly the characteristics of adolescence than of mature men and women, while there are some high-school

students who have matured as completely as they ever will. To attempt the division of a system of schools into separate and distinct parts on any such indefinite and indeterminate basis is a procedure justifiable only as conformity to tradition.

Functional activity. Is there no distinction which can be drawn between the three divisions of public education in the United States? There certainly is, but it is not a sharp and clearly differentiated distinction; neither does it come at any particular age or period. Each stage, as a whole and in general, has its distinguishing mark or marks, determinable according to purposes or objectives; but to consider that pupils radically change, and consequently need a radically different school, between the time they leave an elementary school in June and enter a high school in September is not only fallacious, — it is absurd. If the schools are organized, conducted, supported, for the benefit of the children attending them, then they should be made to correspond in form and procedure with the nature of the pupils in them. The desideratum of organization is not to perfect a logical system but to work out a plan adaptable to the individuals who will be served by it. Those individuals, as shown previously, develop gradually and pass from one period to another by almost imperceptible steps. So should the organization by which it is hoped to attain the objectives in each of these three main divisions of the public-school system gradually lessen emphasis upon elementary-school features and by degrees assume characteristics of high schools; as the elementary features gradually merge into the high school, so should the college and after-school-life characteristics appear through the high school with ever-increasing emphasis while the high-school features merge into the distinguishing marks of college or of practical affairs. By as nearly imperceptible degrees as possible the forms as well as the procedures which characterize each higher step should be merged into those lower down, and those of the lower stages by degrees eliminated as the organization goes higher.

What are those characteristic features upon which the changing emphasis must play? They may be expressed in terms of functional activities of the three types of school. It is the prime function of the elementary division in education to develop knowledge, skills, and attitudes in those activities which all citizens should possess in common; that is, to exercise primarily and place emphasis upon the integrating function, to secure the unity of life. The high school has as its function for emphasis the discovery and development of individual aptitudes as well as the training of its students in a method of acquiring knowledge for themselves; that is, to exercise primarily the differentiating functions. The college must function as the training-ground for the specialist, as the institution which discovers and applies new knowledge and thereby offers the students in it the fullest and freest chance for self-expression and original effort. These are the distinguishing marks of the three orders of public education in the United States. It is the emphasis upon each of these functions which ought to characterize the organization of the system. All are found to a greater or less degree in all divisions of the system, none belongs exclusively to any one division, but the *emphasis*, as indicated, is what should distinguish elementary, high-school, and college education.

THE TRADITIONAL FORM

Origin of dividing lines. By the time there had come about a connected and related system of public schools there had developed the necessity for some sort of internal divisions within the system, made necessary by the large number of children who attended school in a single building. A not uncommon form of division was, as previously pointed out, primary, intermediate, grammar, high. All these divisions might be housed in one building, but the high school was often set apart in a building of its own, as was also sometimes the primary department. Usually one teacher had charge of the

primary department, another of the intermediate department, a third of the grammar department. The high school had several teachers, each usually doing a specialized piece of work. Still the numbers within a given area of the rapidly growing industrial centers increased to the point where one teacher could not handle all the work of one department; hence a second and then a third teacher often had to be added. European influences, particularly of Germany, had also been at work in the educational thought of the nineteenth century, and the system of grading into annual units came into being, — exactly why an eight-year elementary school and a four-year high school no one seems to know. Perhaps the laws for compulsory school attendance to the age of fourteen had something to do with it, and perhaps not. Perhaps there were certain European influences at work here also. At any rate, it became the almost universal custom to have an eight-year elementary school and a four-year high school. In some of the Southern states the elementary period was made seven years in length, and in scattered localities of New England it was made nine years long. Common practice was as just stated, and has come to be the characteristic of American elementary schools.

Internal articulation. The organization within the system of subsections or subdivisions corresponding to the school years and called grades necessitated some means of articulation between such grades, some procedure by which to pass pupils on from one grade to the next. The prevailing custom of examinations was adopted as the means ready to hand, with the attitude that such examinations and promotions should be annual, coming at the close of the school year. But whereas in the earlier days the examinations had been oral and had been conducted by the members of the local school committee, or board, — an external examination, — now the practice became internal in nature and the teachers themselves set, gave, and marked written examinations. Largely on the basis of such examinations pupils were passed on or

held back from year to year, and the decision was largely based upon results as a whole, even though children did fail of promotion because of particularly poor results in the examinations on one or two subjects. This procedure has been the more feasible because the organization was of the one-teacher-to-a-room form, one teacher giving instruction in all the subjects. Modern practice has added to these examinations the criteria of teacher-judgment, the results of intelligence tests, and the scores of achievement tests,—a composite basis for the determination of pupil growth and advancement.

Articulation within the elementary school itself has been moderately bothersome. More difficulty has been encountered in working out a satisfactory system of promotions within the high school. The ordinary procedure has been to organize the four years of the high school on the subject-department plan to as large an extent as possible. In the small schools such subject lines of demarcation have not been exclusively possible, although even here the effort has been to secure a certain show of similarity in the subjects over which a single teacher presides; for example, science and mathematics, ancient languages and ancient history, and so forth. In the larger schools particularly it has come about that a given pupil's term mark has been made up from the results of examinations and tests in four or five different subjects, each examination being made, given, and evaluated by a different teacher. The inequalities resulting from such a procedure have been set forth in many forms, showing, for instance, how the same examination paper of a single pupil when marked by each teacher in a school would be graded all the way from practically perfect to absolute failure. Nevertheless it is not unknown for a high-school pupil to have failed of promotion even though his (or her) marks in all subjects but one out of four or five were well over the passing grade. Group judgment of the teachers concerned, standardized tests, intelligence ratings, and the like have

helped greatly to secure better articulation between the work of the years in the high school. Articulation of the internal divisions in the public-school system remains a continuing problem for executives. So far as the college is concerned in this matter, it need only be stated that the examination method still holds sway as a measure of student efficiency in the colleges. Various checks and balances are tried out; but when all is said and done, it remains true that advancement through the college years depends very largely upon the results of the subject-examinations. Dissatisfaction with this procedure is causing several of the colleges and universities to search for and experiment with a more reliable means for evaluating student efficiency. In general it may be said that articulation between the grades of the elementary and the high schools is increasingly being accomplished by the use of standardized objective measures; in the colleges the less reliable and less valid old-type examination procedure still obtains.

Relation of elementary to high schools. Difficulties of adjustment between the grades within the three major divisions themselves have always been subordinated to the problem of determining how the relations between the major divisions should be established. Historically, there have not been established in practice organic interrelations between the elementary schools and the high schools, but on the contrary rather sharp lines of demarcation have been drawn between them. The theory of periodic development has operated to make it difficult to establish sequential relations between these two divisions in public education.

Following the precedent established by the academy, the high schools for long years demanded and practiced the right to set their own examinations for entrance, such examinations being of course in so-called elementary-school subjects. There existed, therefore, in many places for many years the anomaly of a system of public schools in which the pupils could pass from the elementary to the higher division only

by means of passing an examination set by the authorities of the higher division, but they were passed from one grade to another in the lower division on the basis of the examinations set by the authorities of each lower grade. In theory the high school and the elementary school were sequentially related; in practice an artificial wall of examinations kept them separate entities. It was a long and bitter struggle to break down this barrier and secure entrance to the high school for the elementary-school pupils by a procedure comparable to that by which they were promoted from one grade to another within the elementary schools. Abolition of the district system and the adoption of a graded town or city system brought about a condition in which both elementary-school and high-school pupils were advanced on a recommendation and regular promotion basis, not only within their own system but even from the elementary school in one locality to the high school in another. The method of securing articulation has been theoretically determined, but the internal features of distinction between elementary schools and high schools still remain under the eight-four division of time, — and remain to interfere with the best interests and vital welfare of the boys and girls concerned.

When pupils pass from the elementary to the high school, the old social groups are broken up and new social groups must be formed. On arrival at the high school the student finds that many of the familiar faces from the elementary school are missing and that many new and unfamiliar faces have appeared. Bonds established in the elementary school have been broken and no new ones have yet been formed. There is in consequence a diffidence, a shyness, a feeling of uncomfortable newness and unfamiliarity which serves to inhibit normal and natural activity.

As the work of the usual four-year high school begins, many other differences appear. The teachers are more interested in subject matter and not so maternal or paternal as were those in the elementary school; usually also they are

less well-trained professionally, though ordinarily they have had a much more extended academic education. They pay less attention to the matter of rendering assistance to the student and expect from the student a large degree of self-reliance and assumption of personal responsibility. The methods of teaching are radically different: there is less showing, with more directing and suggesting, — not that it is better or worse, but it is radically unlike the method of the elementary school. Instead of having one teacher all day long who teaches every subject the pupil studies, the high-school student may not see the same teacher twice during the same day in classroom exercises. The subjects themselves are strangers. In the elementary school they had become old and trustworthy friends, but the high-school subjects dress differently, use a foreign tongue, and do not permit the easy familiarity so characteristic of the rudiments of learning. Accustomed to restraint in conduct, the personal freedom accorded by the high school is almost irksome; it is at least a strange condition, a novel experience, an unaccustomed pleasure, perhaps, to some. Taken all together, the tone and the atmosphere, the surroundings, and the conditions of life in the high school present an utterly changed environment. It is true that such conditions and such changes are inevitable and perhaps desirable. The important point to be noted is that under the eight-four plan of school organization this change of environment is a sudden and abrupt one, and pupils are expected to revolutionize their whole set of school habits and attitudes almost overnight; and that is impossible. The details of the method of articulation have not been worked out successfully under this traditional division of time in the public-school system. The results have been disastrous for pupils and costly for society. Gradation of progress through the system of public schools has not been accomplished by the eight-four system, the sequence is imperfect, the change is too radical, the demand upon the pupils is too impossible, too greatly opposed to the nature of their life. If the func-

tions of these two divisions are as stated, then the eight-four division of time is disproportionate, uneconomical, and unpsychological.

Relation of high schools to colleges. *Preview.* The articulation of secondary schools and colleges has always, in the United States, been very close but never entirely satisfactory. At the outset the sole function of the colonial secondary school was college preparation. In consequence the school looked to the college for guidance, and the college looked to the school for students prepared in accordance with its specifications. While the academy at first attempted to exercise the function of preparation for "mercantile and mechanical pursuits," it was ultimately forced through the power of circumstances to abandon this more general function and has become in its best forms the college-preparatory school *par excellence.* The high school began as the secondary school for youth who were not going to college. It has never abandoned the idea that this was its prime function, but it has been constantly on the defensive in respect to this duty and has been forced to accept college preparation as one function which it must exercise. There was a time when the high school was prone to accept the dictum that "what is good preparation for college is good preparation for life"; and if it had completely accepted such a policy, it would have fallen victim to a narrow specialization of function that would have been fatal. However, it was saved by the pronouncement of the Committee of Ten, which declared that the high school had a twofold purpose, "preparation of students both for college and for life." On the strength of this dictum the high school has been able to maintain its foundation policy and serve both as a terminal station and as a junction point. How it has served as a step toward college, what the methods have been and are, by which its work has been related to college work, are matters of concern to a clear understanding of the high school and its province. The college undoubtedly has the right to prescribe what shall be the requirements for

admission to its courses. What it does not have the right to do is to force the adoption by the high schools of programs confined to these requirements or with major emphasis upon such prescriptions. Colleges and high schools alike must recognize that large proportions of high-school pupils cannot and ought not to go on to college, but they can and ought to have at public expense as efficient a preparation for their kind of life as the smaller group who can and should go on to college have for their kind of life. The interests of the college and of the high school are mutual, and there should no more be emphasis upon the rights of each than upon the duties and responsibilities of each to the other. Increasing acceptance of this point of view has been of mutual benefit during the past twenty-five years and has served to establish a better sequence between high school and college.

During the years there have evolved several methods by which sequential relations between the secondary and the higher institutions could be established. All such methods that have come into being are in use today, — not all in all places, and not all in any one place, — but all the practices are functioning somewhere at the present time. None of them has worked well without recognition in some form or in some phase of the standard entrance unit. A quantitative basis upon which to estimate the preparatory work done by high-school students has become an indispensable aid to the administration of college-entrance requirements.

The entrance unit. For nearly two hundred and fifty years after the founding of Harvard College in 1636 and its first published statement of admission requirements in 1642 there was no such conception as entrance units. For the first nearly two hundred years each college set up its own requirements, — usually in most vague and general statements, for example, "properly construe and parse," "a compendium of geography," and the like, — conducted its own examinations, and, in general, attended to its own admission affairs independently. In the main, college-entrance requirements dur-

ing this period were limited and prescribed. Latin and Greek were the only required entrance subjects until arithmetic appeared sometime in the middle of the eighteenth century. From 1800 to 1850 English grammar, algebra, geometry, and geography were added to the list. Only the A.B. degree was given as the reward of the college period of study, and the course leading thereto was classical, rigid, and narrow.

About the time of the Civil War, or a little earlier, German influence was beginning to be felt not only in the lower schools, but as well in the colleges, and they began to offer other degrees than the A.B., such as Ph.B., B.S., B.L., and others. Such a procedure had come about through the desire of the colleges to make themselves service institutions to as large a proportion of young Americans as possible. Many youths came to the colleges unprepared to carry on the work in the courses there required for the A.B. degree, but possessed of ample intellectual ability. The colleges felt in duty bound to offer them opportunities for higher learning and desired to reward them for efficient work. The practice has been abused, no doubt, and they have become in some cases "booby prizes," but it was an honest effort on the part of the colleges to meet a situation growing out of a lack of uniformity, definite standards, and poor articulation. It was during this period that "electives" appeared in college programs of studies, and that the "group system" first made its appearance. The various uses of these devices are concerned with college administration and have only indirect bearing upon the problem of entrance; that is, they were devices used to provide a path to a college degree for students who came up to college unprepared in the classics and the traditional college-entrance subjects.

The third period in the development of college-entrance requirements began when, in the last quarter of the nineteenth century, colleges began to adopt the plan of "free electives." The older narrow and rigidly prescribed course for the degree had gradually broken down and there had come

about an expansion of courses and subjects within the college programs. The expansion of human knowledge, the freer intercourse between nations, the better and increased means of transportation, had brought knowledge out, had made it no longer the privilege of a class, and had produced a necessity to study human relations and the world of man in much more than an elementary manner. The high schools, also, were by this time rapidly developing and were graduating a large number of students, although many of them could not meet the specific requirements of college admission, and the colleges needed and were vying for more students. The most potent influence was perhaps the development of the state universities and completion of the state public-school system. These state universities were free of tradition and felt they had a very definite duty to perform toward the young people in the states who had not been prepared in the classics and who desired a higher education more immediately related to the affairs of a work-a-day world. It was increasingly evident that some plan for coördination between the high schools and the state universities, at least, would have to be worked out. To be effective such a plan would have to be built upon some sort of a quantitative basis, if possible of a mathematical nature.

In 1884 the National Council on Higher and Secondary Education of the National Education Association declared for "a course in preparatory instruction four years in length." The Committee of Ten, which reported in 1893, suggested that "the sum of the studies in each of the four years" might amount to "16 or 18 or 20 periods a week" and that "in each year at least four of the subjects" should be "pursued at least three periods a week and that at least three of the subjects" should be pursued "three years or more," and so on.[1] Clearly this was an effort to arrive at a quantitative definition of college-entrance requirements. In 1895 the state of New York used the term "count," which was explained to mean that "each student takes three studies each day for five days each

[1] Adapted from Report of the Committee of Ten, pp. 52–53.

week. The term 'count' represents 10 weeks' work in one of these studies." [1] So the effort went on for several years until the report of the Commission on Accredited Schools of the North Central Association of Secondary Schools and Colleges in 1902. Here a unit was defined as "a course covering a school year of not less than 35 weeks with 4 or 5 periods of at least 45 minutes each per week." [2] The years following saw certain changes, — for example, forty-minute periods were allowed, provided there were five periods per week, and so on, — but it was this statement of the North Central Association upon which the well-known "Carnegie Unit" was built. Even upon the recommendation of several national bodies the high schools were slow to adopt the term and continued to make use of such undefined terms as "credits," "points," "counts," "periods," and so forth, and to use the term "unit" in a loose and irregular fashion. In the course of time, however, and by persistence from within the colleges, and through the influence of certificating bodies the entrance unit came to mean, as now commonly quoted, "a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work." For convenience it is often defined also as "120 clock hours of classroom work, two hours of laboratory work to be counted as one."

It has taken some time to secure general acceptance of the standardized entrance unit and longer still to arrange high-school programs of studies on this basis. The practice is, however, now common throughout the country to arrange high-school programs on this standard-unit basis, as is the practice of acceptance by the colleges of fifteen such units as sufficient evidence of adequate preparation for college work. The administration of these fifteen units required for high-school graduation and for entrance to college differs widely among both colleges and high schools, too widely to

[1] H. C. McKown, The Trend of College Entrance Requirements, 1913–1922, *United States Bureau of Education Bulletin No. 35*, 1924, p. 41.

[2] Seventh Proceedings of the North Central Association of Secondary Schools and Colleges, p. 8.

admit even of generalization. This numerical evaluation as a basis for estimating high-school work has been of immense service in the efforts to develop a workable system of articulation between high schools and colleges; it has also aided greatly to facilitate the administration of programs of studies within the high schools themselves. It has secured uniformity where essential and has at the same time offered freedom in details of execution. It has made for unification and concentration of effort; it has made possible a close and friendly relation between college and high-school administrators.

With this understanding of a unit kept constantly in mind as the basis for the administration of college-entrance requirements the methods of admission may be very briefly summarized. Entrance examinations in specific preparatory subjects administered by the individual colleges themselves are practically universal. In all but a very few colleges the results of examinations set by a College Entrance Examination Board are made use of in administering entrance requirements. Two forms of college entrance by schemes of certification or accrediting are in common use. In the one each college has its own list of high schools accredited by its own plan of inspection of and check upon student success. In the other a central board, for example, the New England College Entrance Certificating Board, and others, sets up standards, inspects, and accredits high schools within a prescribed area, and the colleges accept students upon certificates from the high schools on the accredited list. In a very few states a list of accredited high schools is prepared in the office of the State Superintendent of Public Instruction, and the colleges (state universities, by law) accept students on certificates from such schools.

The Harvard Plan. Up to 1911 Harvard College had steadily maintained the method of admission by examination. In that year it adopted a scheme which it called the "new plan" and which called for specific information concerning each candidate for examination on such matters as concerned

the student's school record quantitatively and qualitatively considered. If this record proved satisfactory the student was considered as eligible to take examinations in four preparatory subjects selected by him out of a prescribed list. The plan has proved a success as a means of selecting students of college caliber and has been widely adopted by colleges. The College Entrance Examination Board has set such comprehensive examinations since 1916. The Harvard Plan as set forth in the Harvard University Catalogue of 1911–1912 is as follows:

Candidates for Admission to Harvard College may apply for admission either by the plan described above (the usual examinations in all subjects) or by the following alternative plan. This new plan does not take the place of the old plan; it provides another method of admission for good scholars.

To be admitted to Harvard College a candidate

1. Must present evidence of an approved school course satisfactorily completed; and

2. Must show in four examinations, as explained below, that his scholarship is of a satisfactory quality.

SCHOOL RECORD

A candidate must present to the Commission on Admission evidence of his secondary school work in the form of an official detailed statement showing

(*a*) The subjects studied by him and the ground covered.

(*b*) The amount of time devoted to each.

(*c*) The quality of his work in each subject.

To be approved, this statement must show

(*a*) That the candidate's secondary school course has extended over four years.

(*b*) That his course has been concerned chiefly with languages, science, mathematics, and history, no one of which has been omitted.

(*c*) That two of the studies of his school program have been pursued beyond their elementary stages, *i. e.*, to the stage required by the present advanced examinations of Harvard College or the equivalent examinations of the College Entrance Examination Board.

THE EXAMINATIONS

If the official detailed statement presented by the candidate shows that he has satisfactorily completed an approved secondary school course, he may present himself for examinations in four subjects as follows: —

(*a*) English.

(*b*) Latin, *or* for candidates for the degree of S.B., French or German.

(*c*) Mathematics, or Physics, or Chemistry.

(*d*) Any subject (not already selected under (*b*) or (*c*)) from the following list: —

Greek	History	Physics
French	Mathematics	Chemistry
German		

These four examinations must be taken at one time, either in June, or in September.

The comprehensive-examination plan. The latest plan by which high-school students may pass into college is the psychological-examination plan, or the intelligence-test plan. The system grew up out of necessity, occasioned by the limitations of many of those students who came into the colleges as members of the Student Army Training Corps in 1918. Under this plan the school records of the students, personal qualifications as evaluated by their teachers, the results of psychological tests, and such other information as can be secured are all taken into consideration and students are accepted or rejected as entrants to college. The results have been most satisfactory and several colleges are experimenting with the plan to perfect the technique of its administration. After having made an extensive study of the use of intelligence examinations as a basis for admission to Columbia University, Wood concludes:

On the basis of experimental evidence . . . we have learned that the intelligence test is the peerless admission criterion when used in conjunction with other available criteria. In the matter of predicting academic achievement, the intelligence test stands without a serious rival . . . the intelligence test gives a solid foun-

dation for building up a system of differential admission, whereby students would not be admitted to branches of the university for which their intellectual powers render them clearly unfit.[1]

The early tendency in securing articulation between high schools and colleges was to estimate the eligibility of the candidates on the single basis of knowledge about preparatory subject matter. The standard for such evaluation gradually evolved into a quantitative measure defined as a unit. The single basis of academic qualifications has been supplemented in recent years by estimates of personal qualities, capacities, and abilities. There has come through the years an increasing recognition of the fact that success in the higher branches of learning is not dependent alone upon knowledge of facts or tools, nor even upon native intellectual abilities, but that positive student attitudes, "the will to do," are absolutely essential to efficient performance. So also has there been gradual recognition and acceptance of the mutual responsibility of colleges and of high schools to select as well as to prepare candidates for higher learning. Acceptance of the fact of individual differences has brought about a wide variety of means by which to develop knowledge, skills, and attitudes among high-school students, and has secured flexibility of methods for gaining entrance to the colleges, together with a greater liberality of choice within the college, by which to accomplish the desired end. The present tendency seems to be towards devising means by which the high schools and colleges may exercise the selective function over a long period of time in order that the directive and adjustive functions may be exercised more in accord with student needs and student welfare. It is evident, therefore, that the differentiating function, that is, that of discovery, development, and direction, of individual differences, is the function which should receive gradually increasing emphasis throughout the high-school years and accentuated

[1] From Wood's *Measurement in Higher Education*, p. 274. Copyright, 1923, by World Book Company, Yonkers-on-Hudson, New York.

emphasis through the college period. The modern tendency to select college students on a multiple basis, taking account of individual differences, instead of on the single basis of factual knowledge, bids fair to improve greatly the sequential relation between the secondary and higher units of the American public-school system.

The traditional form of the public-school system, — eight years of elementary-school work, four years of high school, and four years of college, — appears to have one highly unsatisfactory point of articulation, namely, between the elementary and the high school. This condition was recognized before the close of the last century, but only after ten years of the new century had passed did a constructive plan appear as a remedy for the condition. The effort to evolve a better articulated system of public schools is to be the work of the twentieth century, and the general direction which such efforts will take are beginning to appear. Such trends will be the next consideration.

THE REORGANIZED FORM

Its gradual formulation. Dissatisfaction over the articulation between the parts of the public-school system arose and a feeling among college administrators developed that the period of preparation for young men entering the professions was too long. In 1888 President Eliot, speaking before the Department of Superintendence of the National Education Association, gave expression to the concern felt by Harvard over this question and suggested that much might be done toward answering it if those in charge of the public schools would devise means for condensing the work of elementary and secondary schools. He suggested shorter vacations, longer school days, reduction of the number of reviews, improvement of the teaching force, and better-arranged programs of studies. The proposition met with hearty response from the schoolmen, many of whom knew only too

well that pupil-time was being wasted and that the work then done in the schools could be speeded up with benefit to all concerned. Nothing official was done, however, until the appointment of the Committee of Ten, the prime function of which was to study the secondary schools in relation to the colleges. As the work of the committee progressed it became apparent that the entire range of school provision would have to be considered. At first the eight-four division of time between elementary and secondary schools was taken for granted, but when several of the subcommittees suggested that subjects then begun in the high schools ought to be begun in the elementary grades, and it was evident that the trend of sentiment was toward a redivision of time between the two types of schools, the committee took it upon itself to declare that "it is impossible to make a satisfactory secondary-school program limited to a period of four years and founded on the present elementary school subjects and methods."[1] It therefore proposed that either certain subjects — which it named — should be begun in the eight-year elementary school, or that the elementary-school period should be reduced to six years and the high-school period increased to six years. It furthermore very decidedly declared the advantage to all concerned if a closer articulation between the elementary and secondary parts of the system could be secured. This report, in brief, initiated the attempt to rearrange the public-school organization on a defensible instead of on an accidental basis.

In 1895 the Committee of Fifteen of the National Education Association reported adversely on the proposal to divide the system into equal parts of six years each, but suggested that algebra might be substituted for advanced arithmetic in the seventh grade, and that Latin might take the place of English grammar in the eighth. This would in their opinion make a proper transition from elementary to secondary schools. This committee also considered the problem of

[1] Report of the Committee of Ten, p. 45.

departmentalization versus grade-teacher organization (one teacher to a grade), and recommended that one or two subjects might be departmentalized in the elementary school but not earlier than the seventh grade. On the whole the attitude of this committee was reactionary; it certainly was not one of aggression.

The same year that this Committee of Fifteen reported, the Department of Secondary Education appointed a Committee on College Entrance Requirements. It represented high school, private academy, and college interests; it called in representatives from various bodies for consultations; it carried on its work for a period of four years; and in the end it declared itself with conviction. It stated

> In our opinion it is important that the last two grades that now precede the high school course should be incorporated in it, and, wherever practicable, the instruction in those two grades should be given under the supervision of the high school teacher.[1]

It went even further than this and declared that "instead of dividing our educational years into eight primary, four secondary, and seven or eight higher, we should divide them into six primary, six secondary, and six higher."[2] These very positive assertions they defended by asserting that such divisions were more in accord with the nature of the pupils, that the transition from the grade-teacher to the departmental plan of organization would be less difficult, that more pupils would be retained longer in school, and that because of this better sequence more pupils would graduate. It was evident that this committee was convinced of the necessity for a redistribution of the public-school years, and that they had developed a set of principles upon which to work out a constructive plan.

The interest thus roused in the question spread to other organizations. At a series of conferences of institutions associated with The University of Chicago the problem expanded

[1] Report of Committee on College Entrance Requirements, p. 23. [2] Ibid. p. 98.

into a consideration of whether or not the secondary-school period should reach upward as well as downward and include the first two years of college work. Committees of the National Education Association continued to study and discuss the problem, and the same point concerning upward extension was raised in several of the reports and discussions. Finally, in 1905, a standing committee on the question of elementary-school and secondary-school relations was appointed, which reported annually the results of its deliberations. Sentiment was rapidly crystallizing in favor of a six-year elementary and six-year secondary school, modified departmentalization in grades seven and eight, promotion of pupils by subjects instead of by year, and complete departmentalization in the high school. Emphasis had shifted also from an attempt to secure logical organization of knowledge to an attempt to arrange a system in accord with the nature of children. Knowledge had become a means instead of an end.

Finally the Committee of Nine (attempting to set forth in considerable detail the functions of the high school) reported in 1911, and took the rather advanced position that any well-planned high-school curriculum should be acceptable as sufficient preparation for entrance to college. The National Education Association this same year appointed the Reorganization Commission to serve as a continuing central clearing-house committee for the purpose of working out fundamental principles, formulating courses, determining types and forms of internal organization, and the like. From the very beginning there had been tests of the plans and schemes which had been proposed, made by the practical schoolmen under actual school conditions. These had been, however, rather disorganized and with no very clear-cut and definite program of procedure. It was the work of the Reorganization Commission to establish such a basis or bases. This it did in its report *The Cardinal Principles of Secondary Education* and in the various reports on subjects of high-school grade which continue to appear.

Its official sanction. *Basic conceptions.* In *Cardinal Principles of Secondary Education,* published in 1918, the Reorganization Commission set forth what have become specifications and blue prints for the erection of a new style of edifice in public-school organization, particularly of the grades seven to twelve, or as suited to the chronological ages of school pupils from twelve to eighteen. Taking the position that "secondary education should be determined by the needs of the society to be served, the character of the individuals to be educated, and the knowledge of educational theory and practice available," [1] and that these conditions are not static but in a process of development, they show how these factors demand that reorganization take place.

The changes in American society over the past quarter-century or more have profoundly affected the life of the individual. Civic responsibilities have increased and broadened, industrial and economic conditions are almost infinitely complex, avocational interests and opportunities have multiplied many-fold. Hence the elements of knowledge supplied to the mass of the people do not alone meet the needs of society. Besides all this some of the other agencies responsible for the education of children provide less educational stimulus than in the past. Industry has shifted from home surroundings to factory conditions; machinery has become a substitute for manual processes; processes of manufacture have become specialized to a high degree; the apprenticeship system has disappeared. Home conditions have likewise changed: parents are employed away from home; there is congestion in urbanized areas; parents generally accept less responsibility for the education of children. So also in Church and State there have been radical and far-reaching changes which call for extensive changes in secondary education.

Since 1890 there have been radical changes in the secondary-school population; a larger proportion of the total popu-

[1] *Cardinal Principles of Secondary Education,* p. 7.

lation now seek secondary education and this has introduced a wide divergence of capacity, ability, social status, economic position, national and racial backgrounds. Besides, "the broadening of the scope of secondary education has brought to the school many pupils who do not complete the full course but leave at various stages of advancement." [1] This excessive loss of pupils through the years of the high school is bad, socially and economically, and cannot be ignored.

As to changes in educational theory the developments in all the sciences underlying education have been rapid, especially in educational psychology, and they all have significant contributions. Individual differences merit fuller consideration; the problem of general values and general mental discipline needs revision as applied to methods and subject matter; the learning-process as it develops out of life activities rather than out of abstract and logically arranged facts has new significance for greater emphasis upon applied and applicable knowledge; psychology and physiology have agreed that "the development of the individual is in most respects a continuous process," [3] which would imply that an abrupt break between elementary and secondary education is no longer defensible, and that, in fact, any sharp distinction between any two successive stages of education is undesirable.

They then declare that for education in the United States a clear conception of the meaning of democracy is necessary, and they state:

> The purpose of democracy is so to organize society that each member may develop his personality primarily through activities designed for the well-being of his fellow-members and of society as a whole.[2]

The realization of this ideal demands that individuals shall choose a vocation best adapted to their abilities in the full

[1] *Cardinal Principles of Secondary Education*, p. 8.
[2] Ibid. p. 9.

realization of the activities and ideals involved in the attainment of a high degree of efficiency. For this education is responsible, and therefore "education in a democracy, both within and without the school, should develop in each individual the knowledge, interests, ideals, habits, and powers whereby he will find his place and use that place to shape both himself and society toward ever nobler ends." [1]

The objectives of education they arrived at out of an analysis of the activities of an individual in a democracy. Normally they found men to be members of a family, of a vocational or occupational group, and of a more general community or civic group. Further, men normally have some leisure time which may be put to helpful or detrimental use; so, too, the health activities of an individual may be personally and socially of either a positive or a negative order; to participate intelligently in group activities particularly certain rudiments of learning and knowledge are necessary; and, finally, conduct which is constructive and helpful is founded upon right principles and does not issue from unconditioned response to impulses.

The seven objectives. The commission therefore set up the following as the main objectives of education:

1. Health. 2. Command of fundamental processes. 3. Worthy home-membership. 4. Vocation. 5. Citizenship. 6. Worthy use of leisure. 7. Ethical character.[2]

This is not to be considered as an implication that the educative process any more than the pupil is divisible into separate parts but only as an effort to direct attention toward the outstanding elements in the process of education.

These seven objectives apply to education as a whole, but specific consideration was given by the Commission to the part which the secondary school should play in realizing these objectives. Health needs during the years from twelve to eighteen are particularly important.

[1] *Cardinal Principles of Secondary Education*, p. 9.
[2] Ibid. pp. 10, 11.

The secondary school should therefore provide health instruction, inculcate health habits, organize an effective program of physical activities, regard health needs in planning work and play, and coöperate with home and community in safe-guarding and promoting health interests.[1]

As to command of the fundamental processes the emphasis throughout the secondary-school period should be upon the perfection of skill in their use through variety of application to new material and new problems rather than through the use of drills and reviews so characteristic of grades seven and eight. The secondary school should develop recognition of the fact that both boys and girls contribute to and receive benefit from home-membership. In particular the conception should be developed that the boys and girls are now home-members and should be assisted to develop right attitudes toward present home responsibilities and the contribution of the home to their present situation. To the realization of this goal the coeducational type of school, a family of both men and women teachers, the social studies, literature, music and art, as well as the specialized homemaking courses for girls and home-understanding courses for boys should all and severally contribute. Realization of the vocational objective "should equip the individual to secure a livelihood for himself and those dependent on him, to serve society well through his vocation, to maintain the right relationships toward his fellow workers and society, and, as far as possible, to find in that vocation his own best development." [2] A well-organized program of vocational guidance becomes necessary to inform the student about the world's work and to assist in the exploration and discovery of individual capacities and abilities. Due regard should be given in the vocational work to the group elements in occupational activities as evidenced in the "significance of the vocation to the community," the development of "a clear conception of right relations between

[1] *Cardinal Principles of Secondary Education*, p. 11.
[2] Ibid. p. 13.

the members of the chosen vocation, between different vocational groups, between employer and employee, and between producer and consumer." [1] The extent of specific training for a particular vocation is a local and individual problem. The good-citizenship objective should recognize international relationships as well as national, provincial, and local. So there should materialize "a many-sided interest in the welfare of the communities to which one belongs; loyalty to ideals of civic righteousness; practical knowledge of social agencies and institutions; good judgment as to means and methods that will promote one social end without defeating others; and as putting all these into effect, habits of cordial cooperation in social undertakings." [2] The school means should be civic projects and problems within the experience of the pupils and practical civic situations through the school organization. The social studies, English, and civiculture provide opportunities through formal studies to develop a recognition of the contributions which other nations as well as our own have made to human welfare. The use of leisure time becomes worthy when its issue is recreation of body, mind, and spirit. The curricular as well as extra-curricular activities of the secondary school should be so organized and conducted as to supply the means by which pupils may develop rational tastes, appreciations, and attitudes in the fields of music, art, literature, and sports. The development of ethical character is of paramount importance and should be emphasized in all phases of the school work, both formal and incidental. In particular, emphasis must be placed on the development of a sense of personal responsibility and initiative, fair play, and the corporate spirit.

All the objectives are interrelated; no one can be considered or attained in isolation. The school subjects must be reorganized so as to become a series of means by which to realize these goals. Education must be conceived as a

[1] *Cardinal Principles of Secondary Education*, p. 15.
[2] Ibid. p. 13.

process of growth and not of mere accretion. For a fuller realization of this principle school activities must be within the experience of the pupils, and must be of inherent present worth, possessing current rather than deferred values and thereby leading to a development of interest in future applications of the knowledge, skill, or attitude thus gained. The study of subjects for preparatory purposes alone is stultifying and should not be sanctioned.

The recommended divisions. The system of public education, they considered, should be reorganized in accord with the nature and characteristics of the pupils in the schools. At about twelve or thirteen years of age children should be given a chance to investigate many fields of knowledge and the broad realm of human activities that a wise and rational choice of occupation and field of life interest may be made. Eight years is too long a period to devote to the objectives of common knowledges, skills, and attitudes, and four years is too short a period in which to discover and develop individual aptitudes. The commission, therefore, recommended "a reorganization of the school system whereby the first six years shall be devoted to elementary education designed to meet the needs of pupils of approximately 6 to 12 years of age; and the second six years to secondary education designed to meet the needs of pupils of approximately 12 to 18 years of age." [1] This period of six years to be devoted to secondary education the Commission thought might well be divided into junior and senior periods of three years each. In the junior period the emphasis should be upon the attempt to aid pupils towards exploration of aptitudes and a provisional choice of life activities. The senior period, in their estimation, should be devoted to training in the chosen fields.

> In the junior school there should be the gradual introduction of the departmental instruction, some choice of subjects under guidance, promotion by subjects, prevocational courses, and a social organization that calls forth initiative and develops the sense of personal responsibility for the welfare of the group.

[1] *Cardinal Principles of Secondary Education*, p. 18.

> In the senior high school a definite curriculum organization should be provided by means of which each pupil may take work systematically planned with reference to his needs as an individual and as a member of society. The senior high school should be characterized by a rapidly developing social consciousness and by an attitude of self-reliance based upon clearly perceived objectives.[1]

The Commission recognized the wisdom of extending the secondary-school period for even two years longer to include what is known as the "junior college," but it deferred action as to an outline of the work of these two years. Thus did the Commission unify the work of many forces which had been at work over many years and which had approached the problem from many angles.

In the matter of articulation of the secondary school with the elementary school on the one hand and with the college on the other the Commission took a most advanced position, holding that children overage for the elementary school should go on into the secondary school and that the latter should admit and provide suitable instruction for "all pupils who are in any respect so mature that they would derive more benefit from the secondary school than from the elementary school." [1] In like manner they said the higher institutions are in duty bound to accept students overmature for secondary schools and attempt to provide courses for them. Here sanction was given to the tendency to broaden and to liberalize not only college-entrance requirements, but curricula within the colleges themselves.

The seven objectives are to be considered as the guides in drawing up courses, organizing curricula, and arranging programs of studies. To do this the entire range of subjects in the secondary schools must be recast and reorganized. The continuing work of the Commission is devoted to this problem.

Distribution of functions. In the matter of functions the Commission pointed out that secondary education must

[1] *Cardinal Principles of Secondary Education*, p. 19.

exercise in the main two functions if it is to serve as the institution of democracy: namely, unification (integration) and specialization (differentiation). Specialization demands that the secondary school should provide: (1) a wide range of subjects, (2) exploration and guidance, (3) adaptation of content and methods, (4) flexibility of organization and administration, (5) differentiated curricula. The function of integration demands that the secondary schools provide for: (1) studies of direct values for this purpose, particularly in the field of the social studies and of the mother tongue, (2) social mingling of the pupils through the form of organization and administration within the school, (3) participation of pupils in common activities, social, athletic, civic. These are not separate and distinct functions, but rather they are supplementary. The curricula of the secondary schools should provide, therefore, for constants as a medium for exercising the integrating function, variables as a medium for exercising the differentiating function, and electives as means by which to secure a balance of either or both unification and specialization. Constants should be taken by all pupils and be determined "mainly by the objectives of health, command of the fundamental processes, worthy home-membership, citizenship, and ethical character." [1]

Variables should be considered subjects peculiar to a curriculum or to a group of related curricula and be determined "for the most part by vocational needs, including, as they frequently do, preparation for advanced study in special fields." [1] The free electives should be "taken by pupils in accordance with individual aptitudes or special interests, generally of a non-vocational nature. They are significant, especially in preparation for the worthy use of leisure."

In the first year of the junior unit the work should be such and so organized as to assist the pupils in the discovery of their aptitudes, much emphasis being put, perhaps, upon many subjects of a vocational nature. Choice of field by pupils should not

[1] *Cardinal Principles of Secondary Education*, p. 23.

be encouraged during this year. Probably a good procedure would be to organize the work of several subjects or projects into short unit courses "so that every pupil may take several of them." For the remainder of the time in the junior unit "some pupils should continue this trying-out process, while others may well devote one-fourth to one-half of their time to curriculum variables. Pupils who will probably enter industry at the end of the ninth grade may well give as much as two-thirds of their time to vocational preparation, but they must not be permitted to neglect preparation for citizenship and the worthy use of leisure." [1]

In the senior unit the recommendation is that "the relative proportion of these three groups of subjects will vary with the curriculum. Pupils who are to enter a gainful occupation before the completion of the senior high school may well devote a large proportion of their time to the curriculum variables, especially during their last year in school." [1]

The type high school. As to whether there should be a variety of types of high schools, each serving a specialized interest, the recommendations are very definite and positive.

> The comprehensive (sometimes called composite, or cosmopolitan) high school, embracing all curriculums in one unified organization, should remain the standard type of secondary school in the United States.[1]

This should be particularly true for the junior school, that it may have the opportunity through variety of contacts to attain its ends. The senior school and the four-year schools of the traditional organizations ought to be of the comprehensive type, in the judgment of the Commission, for six reasons. First because such a school will be more effective in permitting pupils to make a wise choice of vocations. In the special-type school many factors other than real aptitude will enter into the matter of vocational selection; for example, nearness of a particular school, sentiment of the neigh-

[1] *Cardinal Principles of Secondary Education*, p. 24.

borhood, and so on. Also, a wrong choice of special-type school once made is difficult to correct. In the comprehensive-type school, however, the chances for wise choice are greater, and wrong choices are more easily corrected. Besides this, wider contacts can be established in the comprehensive-type school, an opportunity most desirable of provision. Secondly, the recommended type makes greater provision for the realization of unification. In it class lines, occupational lines, subject lines, and so on are broken down and group activities are not confined to single, narrow fields of interest. It is "the prototype of a democracy in which various groups must have a degree of self-consciousness as groups and yet be federated into a larger whole through the recognition of common interests and ideals. Life in such a school is a natural and valuable preparation for life in a democracy." [1] Such a school, in the third place, "can provide much more effectively for health education, education for the worthy use of leisure, and home-making education than a number of smaller special-type schools can." [1] Fourthly, it makes for greater accessibility of high-school advantages. Fifthly, it allows opportunity for adaptation of curricula to local needs. Sixthly, proper organization in such a school will secure effective administration of curricula. Such organization the Commission recommends in some detail, the keynote of which is the supervision of curricula by curriculum directors working under the general direction of the principal. In smaller schools the teachers should be organized into committees for a like purpose.

Internal organization. The internal organization of a school should not be based merely on subject matter. A supplemental organization of two forms, each determined by the educational objectives, is suggested. Form A is headed by a principal's council made up of members selected from the teaching staff, "each member of which shall be charged with the responsi-

[1] *Cardinal Principles of Secondary Education*, p. 26.

bility of studying the activities of the school with reference to a specific objective." [1] These members should be (1) a health director, (2) a citizenship director, (3) curriculum directors, (4) director of vocational and educational guidance, (5) director of preparation for leisure. The activities of each are self-evident. Form B is merely committee organization following the same general division of interests. Neither council nor committees can assume any of the ultimate executive responsibility of the principal, but they all may aid to secure a more complete realization of the objectives.

In recognition of the fact that modern life is greatly expanded and enriched as compared with life in colonial days, for instance, and that therefore the youth of today have a much wider field of interests and many more distractions as well as diversions, the Commission takes the position that "education should be so reorganized that every normal boy and girl will be encouraged to remain in school to the age of 18, on full time if possible, otherwise on part time." [2] In regard to part-time attendance it takes a very definite position, to this effect:

> This commission recommends the enactment of legislation whereby all young persons up to the age of 18, whether employed or not, shall be required to attend the secondary school not less than eight hours in each week that the schools are in session.[3]

Secondary as well as elementary education is the rightful heritage of every boy and girl in the United States. It is the task of education to call forth potential worth and equally to inculcate the essence of that individual subordination to common ideals, modes of life, and purposes whereby the United States may have the most favorable conditions under which to develop her conception of democracy.

A new era begun. In accordance with the principles here laid down a nation-wide effort has been made to reorganize the

[1] *Cardinal Principles of Secondary Education*, p. 28.
[2] Ibid. p. 30.
[3] Ibid. p. 31.

work of the high school. Slight modifications in statement, various regroupings of objectives, different interpretations of the phraseology, and some expansions of ideals have come about through the years. All such variations have been divergences in details and not in basic concepts, however, and this statement by the Reorganization Commission has already become an epoch-making document. The new division of time in the public-school system is evolving into 6–3–3 instead of 8–4. Objectives of education at all stages have been classified under seven heads with varying emphasis upon each at various stages and under various conditions. The prime functions of the schools have been determined as integration and differentiation. Details of organization, methods of teaching and of discipline, building programs, redirection and reconstruction of curricula and courses, have proceeded and continue to proceed in the light of the scheme for a public-school system with an elementary school six years in length, a junior high school of three years, and a senior high school three years long, so arranged and conducted as to lead toward a definite sevenfold goal, through the exercise of the functions of integration and differentiation.

The new secondary units. *Junior high school.* Under the reorganized form of the public-school system there is a junior high school three years in length including grades seven, eight, and nine of the traditional system. Pupils are promoted into its first year exactly as they were from grade six to seven in the old system. Besides this group of pupils there are a certain number of over-age pupils who will profit more by such education as the junior high school offers than by continuance in the elementary grades. A separate building and separate organization provide the material factors for the accomplishment of an individual piece of work. The general objective of the junior high school is to discover individual aptitudes and begin the process of developing them. It has also the general objectives which apply to all education such as citizenship, worthy use of leisure, and the

others. Its prime purpose, however, is pupil discovery. It begins to function as a differentiating agency, and this function increases in importance and emphasis through the three years, always retaining a measure of emphasis upon integration, strong at first and gradually diminishing as the work of the school proceeds from grade to grade. To that end it is organized with a minimum of departmentalization during the seventh grade, increasing in amount during the eighth, and reaching complete departmentalization by the second half of the ninth. The range of studies is broad enough to give the pupils a glimpse of all the principal fields of human knowledge and varied enough to appeal to many individual tastes and aptitudes. Opportunities are offered for many short excursions into many fields of knowledge and for brief attempts at doing something in each of many occupations of life. At the beginning the pupil will have little or no feeling of civic responsibility within the school, but as responsibility is gradually placed upon him and increasingly as he responds to it there grows up a pride in his group, a loyalty and corporate spirit which makes for the development of initiative as well as for group consciousness. In like manner the social and athletic activities are organized around the conception of providing a chance for such characteristics as leadership, originality, organizing capacity, directive ability, practical skills, and so on, to manifest themselves and find expression. All these provide material with which to carry out the carefully planned and judiciously administered guidance program, guidance which lays more emphasis upon information and stimulation than it does upon educational determinism, for the junior high school is the place for only tentative choice of life activity and not for final decision, except in the cases of a limited number. The idea behind it all is to provide just as many different ways and means as possible by which boys and girls may express themselves spontaneously and under observation. Hence spread and variety instead of intensity and depth characterize all phases of work in the junior high

school. Such a procedure has its dangers, which are reduced to a minimum by the program which consciously and purposely assists in bringing to a focus the fleeting and fickle interests of adolescents. It is these very superficial interests upon which the junior high school would capitalize in order that final choice of life activities may not be by chance but rather in the light of first-hand knowledge and experience.

Not all so-called junior high schools by any means conform to the description given here. There is no exact and complete standardization of organization, of program, or of methodology. Keeping in mind the general idea and spirit of the junior high school, we may estimate that in 1925 there were at least a thousand such schools in the United States. The great majority of them are found in the West and Middle West; the South and New England have not yet begun to adopt the reorganization form to any very appreciable extent. There is little recognizable tendency among private schools to depart from the traditional form of school organization. So far as public-school organization is concerned there seems to be no doubt that the junior high school has passed beyond the stage of experiment. It functions positively and constructively in a better articulation of the public-school system.

Senior high school. The reorganization form also calls for a senior high school three years in length, including grades ten, eleven, and twelve of the traditional system. Pupils are promoted into it from the last year of the junior school in much the same way as they formerly were passed on from first to second year in the four-year high school. A certain number of pupils too mature to stay longer in the junior school will enter the senior school, and adjustments have to be made for them. Separate organization and building aid in a material way to accentuate the particular effort of this school. The objective of the senior high school is the development of aptitudes already found and the discovery of further modes of individual expression. A certain measure of

attention is still directed toward the modes of expression common to all members of a democratic society, but the major emphasis has shifted to the development of those forms of expression which are personal in character and which can be considered individual contributions to the welfare of society. The work is entirely departmentalized from the very first, following the procedure in the last grade of the junior school. Promotion is by subject and by unit values, and great flexibility is an outstanding characteristic of the entire organization. The subjects of study are more definitely organized into curricula aimed at specific goals with a minimum of constants, clearly defined variables, and a wide range of free electives. Intensity and depth increasingly characterize the work as well as the nature of the material through the years of the senior school. Understanding and mastery are now substituted for perception and acquaintance. Personal and individual responsibility now rests upon the pupils for their own private conduct and for the conduct of the school as a whole. Faculty members are considered more in the light of advisers; they are more and more keeping in the background concerning student affairs as the students move along through the school. They never entirely withdraw, but they tend to allow twelfth-grade students to use their own judgment and find their own way out of difficulties and to question or guide the judgment of pupils in the tenth grade. Extra-curricular activities of the school take on more mature features: range and intensity increase; their purposes become more definite and particularized; insistence is placed upon successful completion of an enterprise; persistence, loyalty, systematic control, recognition of form, and similar standards come to prevail. All in all the point of view which the school tries to develop is that of adults rather than of children. All of this is, of course, gradual and highly individual; it must be, if it conforms to the nature and development of the senior-high-school pupil. Out of this group will come the constructive and progressive leaders, some of them

are destined for high places, and the majority will have to assume duties calling largely for the use of their own unaided efforts. The senior high school provides opportunities for preliminary practice in such experiences.

As a matter of fact few such senior high schools exist today in the United States. There is still so much of the traditional form of organization that senior schools have to carry a ninth grade of their own to provide for some entrants who have come up through the traditional eight-grade elementary school. Not all high-school principals have caught the spirit of this new type of institution, and some of them continue in the form as well as spirit of the traditional school which "prepares for college," and, as an after thought, "for life." Some of the junior high schools are not functioning efficiently and the senior high school is obliged to complete some of the incompleted work of the junior school. In fact, it may well be that three years is not long enough for the junior high school to "do its job," as many of the teachers in it claim. For this, and other reasons, it may come about that the junior school will have to increase to four years in length and the senior school reach up and take to itself the first two years of college education, those years which have been set apart for the junior college. The next reorganization plan may be based on a six-four-four division of time.

Junior college. There is a growing tendency to consider two more years of the educational system as properly belonging to the field of secondary education. The Reorganization Commission recognized at the time it reported on the Cardinal Principles that there was agitation which tended toward inclusion of the first two years of college work in the secondary period. A committee of the North Central Association of Colleges and Secondary Schools in 1915 recommended that the secondary-school period should be considered as eight years in length, including the first two years of the work carried on in college. The idea in practice, however, has taken a decidedly different trend, namely, toward the organization of a

separate two-year unit called the junior college. Its form, its aims, its functions, have not yet become standardized or even become matters of agreement either in theory or practice, yet there are certain sweeping generalizations which can be made in regard to it.

There are four general types of junior colleges: the local or regional two-year college organized as an upward extension of the local school system; the state institution usually organized in connection with some normal school or teachers' college; private colleges which offer the first two years of college work (the larger proportion of these are maintained by religious denominations); and lower divisions or junior divisions within universities. In the main they aim to serve as a connecting link between secondary schools and university organization, — a function designated as "isthmian," — or they aim to provide means for rounding out the general education of such students as do not care to specialize for professions, — a function designated as "terminal." There are many other purposes which they attempt to serve, such as popularizing higher education, making it possible for students to remain longer under direct home influences, aiding in the articulation between secondary-school work and university work, bringing into the secondary school all the work appropriate to adolescence, and so forth. In practice, they appear to be exercising mainly either the isthmian or the terminal function. Consequently their subjects and courses are not radically different from those offered during the first two years in an American college or university. The tone or atmosphere is largely that of the college. The methodology and technique is more like the secondary-school procedure. Perhaps, after all, the junior college is so young an institution it can best be described in terms of the hopes and ambitions of its advocates, which Koos describes as follows:

> These comprehend types of training better suited to the needs of the increasing proportion of the population which the junior college is expected to attract, especially general and occupational

types of training adapted to the needs of students who will not continue their education beyond the work of these two years. All these types of training are to be provided under conditions which will foster, better than can prevalent conditions, the intellectual and social welfare of individual students. Advocates of the junior college anticipate that its general introduction will affect profoundly, but in constructive ways, the organization and functioning of our system of education: it will permit the consummation of the secondary school, will assure the small college an unquestionable function in the educational system, and will encourage the university to differentiate its activities from those of the lower schools, much of whose work it is now called upon to do. They also look for the junior college, through courses offered and through its cultural influences, to be highly serviceable to the local community.[1]

It is still too early to prophesy concerning the junior college, or to estimate fairly or accurately its worth. In 1922 there were over two hundred junior colleges scattered through thirty-seven states, enrolling upwards of 20,000 students. These ranged in size from six or seven students to well over one thousand, the smallest ones being of the private type. The median size, including all types, was under seventy-five, state institutions tending to be the largest. It is evident that the material growth of the junior college has been rapid and extensive, which would seem to indicate that it is meeting a need and receiving widespread moral support. Its place and function in the public-school system is still undetermined.

In its reorganized form the secondary school in the United States is still passing through a period of transformation. Its general trends are toward greater flexibility and adjustments more in keeping with the character of the population it serves; toward extension of educational opportunity and expansion of its program to make such provision possible; toward improved articulation both internal and external; toward a clearer definition of objectives and functions, and the development of an organization in keeping with them. The effort is at present to work out a system which shall func-

[1] L. V. Koos, *The Junior College Movement*, pp. 27, 28.

tion organically with the varied and complicated life of the individual in a highly complex social order to the end that race progress may result.

Summarizing the high-school situation at the close of the first quarter of the twentieth century, Hanus said, in the Inglis Lecture for 1924:

> Looking carefully at our secondary education as it is, we see that the result of all our striving since the Seventeenth Century is, at its best, a great opportunity, and it is a considerable opportunity even when that best is only approximated. At its best, this opportunity may be described as follows: We have a junior-senior high school that is a refining and unifying force in our complex society — a school that, in spite of its many shortcomings and the often weak reënforcement its best endeavors win from the general public, offers the elements of general culture to all normal children approximately twelve to eighteen years old, who are led to seek general culture at an early age through the persuasive influence of a good beginning. At the same time, it provides more and more satisfactory opportunities for the pupil to find himself and to make the most of his dominant interests and powers as he proceeds. It provides preliminary vocational training and experience for the pupil early in his secondary-school career and actual vocational training later if he wants it. In addition to these opportunities for general culture and for vocational training, the junior-senior high school provides continuous educational and vocational guidance so that the danger of inappropriate education of the individual pupil may be minimized. A flexible scheme of classification is provided whereby pupils of approximately the same ability are taught together in order that each will feel the stimulus of measuring himself with his peers and will have a chance to proceed as fast and as thoroughly as he can or as slowly as he must. During the whole secondary-school period the school guards and promotes the pupils' health and physical development by theoretical instruction and directed physical exercises. Through its curriculum and its management, it provides for the development of character — that is, of moral ideals and of conduct in harmony with these ideals; with the same end in view, it encourages and helps to carry on a great variety of collateral or extra-curriculum pupil ac-

tivities. This school is well articulated with the elementary school on the one hand and with the college on the other. It is open to all children of the community, without tuition, on precisely the same terms. This is our public secondary school at its best. We have also private and endowed schools, notably some schools carried on as parts of university departments or schools of education that are organized on the same general plan as is the public junior-senior high school. Like our best public schools, these schools are contributing, each in its own way, to the progressive solution of the problems of secondary education.

To what extent do the secondary schools in a single state or the country over really afford the opportunity here sketched? *We do not know.* Nor do we know *what they actually accomplish* with whatever opportunity they do afford. All that we know is that our secondary schools vary greatly in opportunity and that their product — the secondary-school graduates — is a very uneven product as to scholarship, character, and all the other qualities essential to superior citizenship.[1]

REFERENCES

BRIGGS, T. H. The Junior High School, pp. 1–92, 127–154.

CLEMENT, J. A. Principles and Practices of Secondary Education, pp. 267–323.

DAVIS, C. O. Junior High School Education, pp. 1–30, 52–103.

DEWEY, J. Democracy and Education, pp. 117–145.

HENDERSON, J. L. Admission to College by Certificate, pp. 45–138.

INGLIS, A. Principles of Secondary Education, pp. 261–336, 367–383.

JOHNSON, F. W. The Administration and Supervision of the High School, pp. 14–69.

KINGSLEY, C. D. Cardinal Principles of Secondary Education, *United States Bureau of Education Bulletin No. 35*, 1918.

KOOS, L. V. The Junior-College Movement, pp. 1–28, 189–263.

JUDD, C. H. The Evolution of a Democratic School System, pp. 1–94.

MCKOWN, H. C. The Trend of College Entrance Requirements, 1913–1922, *United States Bureau of Education Bulletin No. 35*, 1924.

SMITH, W. A. The Junior High School, pp. 1–43, 70–99, 150–204.

TOUTON, F. C., and STRUTHERS, ALICE B. Junior-High-School Procedure, pp. 1–120, or entire book, or selected portions of it, according to individual interests.

UHL, W. L. Principles of Secondary Education, pp. 471–614.

WOOD, B. D. Measurement in Higher Education, pp. 12–62, 293–307.

[1] P. Hanus, "Opportunity and Accomplishment in Secondary Education," in *School Review* (April, 1926), Vol. XXXIV, pp. 268–269.

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